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Tomorrow's Wireless Today



Buffalo's Wireless-N Nfiniti router combines exceptional coverage and speed with outstanding ease-of-use. Find out more on page 11!

Home Networking Know-How

HDTVs For Gamers

D-SLR Demystified



August 1, 2007

NOTICE OF EVICTION

Pursuant to the general code of computer usability 892.64(a)

on this 1ST day of AUGUST, 2007, it is hereby declared that:

SPYWARE a.k.a.

ADWARE a.k.a.

MALWARE, herein referred to as: COMPUTER THREATS

must vacate MY COMPUTER immediately due to unfair nuisance to the owner of the property. Reasons for eviction include, but are not limited to:

CRASHES, SLOWDOWNS,
LOSS OF INTERNET, and BREACH OF PRIVACY.

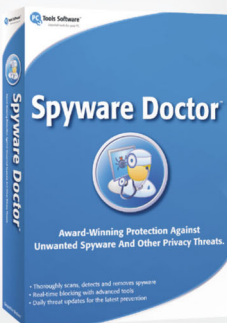
If the aforementioned party refuses to vacate immediately, the services of

SPYWARE DOCTOR shall be retained to forcibly remove

COMPUTER THREATS from the previously declared property

(MY COMPUTER).

Signed,



Spyware Doctor's powerful scanning engine removes spyware, adware, and malware from your computer - and its real-time OnGuard protection will keep them out.

Award-winning Spyware protection - available at Best Buy and online at <http://www.pctools.com/>

On Our Cover: *Featured on our cover this month is Buffalo's Wireless-N Nfiniti router (\$99).*

Cover Story

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Wi-Fi For The HD Era

The Wireless-N Nfiniti Router Shifts Your Media Into High Gear



Open

There's always something new and interesting happening in the world of consumer electronics. You'll hear about it all in *First Glimpse's* Open section.

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Lifestyle Close-Up: Home Entertainment Networking

Most of us are familiar with computer networks where two PCs are connected via some wires and a router. However, today's networking equipment—conventional and unconventional—can open up a whole new world for you and your CE devices. With a little know-how, you can put your hardware and software to work and create a home entertainment network where you can stream photos, video, and music; monitor your home when you're away; record TV to your computer; and much more. In this month's feature package, we tell you just what you need to know to make it happen.

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60 Computer Shopping Tips: Buying A Wireless Router

Home Theater

Everyone wants a sleek, stylish HDTV to accent his or her home, but many folks just don't know where to start when it comes to actually buying one. Whether you're looking for a glossary of terms, shopping tips, or must-have accessories, check out Home Theater for quick tips on making your hi-def experience the best it can be.

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Digital Imaging

Digital cameras and camcorders are changing the way we record the moments of our lives, from quick snapshots of favorite vacation spots to priceless video clips of first steps and other important milestones. Get to know your new digicam or camcorder and learn what to do with your photos and video once you have them in our Digital Imaging section.

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Digital Cameras; Digital Camcorders;
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Computers

Whether you love 'em or hate 'em, almost everyone uses a computer sometime during his or her day, and even if you don't, chances are your spouse or kids do. In this section, you can familiarize yourself even more with this ubiquitous CE device, and we'll also lighten things up a bit with monthly comparisons of the hottest notebook computers and home printers.

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Wireless

We're willing to bet that you can't part with your cell phone or iPod—or both! In this section, we'll tell you everything you need to know about mobile phones and their service plans, and we also cover MP3 players and the cool accessories that go with them. If you love the feeling of freedom you get with no wires or cords, this section is for you.

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CE Lite

Most CE devices are all about fun. Check out each month's Exit page for cool gift ideas for loved ones—and for yourself.

80 Exit



Editor's Note

Routers, gateways, Ethernet, powerlines; networking hardware is not exactly the most glamorous of CE devices, especially when compared to sleek HDTVs and powerful D-SLRs. But any number of these tools can be used to enhance your everyday life through a home entertainment network, and it's easier than ever to create one.

Networking is kind of the “thing” in our office right now. Staff writer Andrew Leibman created his around his Xbox 360 and a TV tuner card. He uses a cable modem and main computer on the upper floor of his house, and an 802.11g router doles out the Internet access and media files to his Xbox 360 in the basement. He connects two notebooks and a second desktop PC to the network with a Wi-Fi adapter. Cool, right? What's cooler, though, is that the tuner card lets him record video on his main computer, which he then streams to his Xbox 360—in essence, creating a DVR, where he can pause live TV, skip commercials, and set a schedule to record shows. He also streams audio during get-togethers and photos of his adorable baby.

Our Design Manager, Lesa Call, created another cool network. She has a desktop PC with a cable modem in her basement, and she uses a Wi-Fi router with her TV upstairs to surf the Internet on her Nintendo Wii using the Opera-based Internet Channel. This means that she can view and navigate Web sites on the big-screen—a real plus for The Weather Channel and CNN.com addicts.

Both Andrew and Lesa created their networks mostly out of hardware they would already get for a conventional PC-to-PC network. They just added a couple of additional pieces to include their gaming consoles and TVs. Genius! And as this month's feature package shows, you can do it, too, with a little know-how and the right tools.



Live well, friends.

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First Glimpse Special Product Section

This special product section is produced in partnership with leading consumer electronics manufacturers and allows us to provide readers with the most timely product information possible. Browse through these First Glimpse pages to learn about the latest hot products.

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Antec Nine Hundred

MSRP: \$149

www.antec.com

Available at select Best Buy™ stores and www.bestbuy.com



A Case That Keeps It Cool

Antec's Nine Hundred is a versatile computer tower case that's customizable to fit your high-demand computing needs. Its advanced cooling method can tackle the hottest system, which makes it perfect for photo or video editing, as well as any graphic work. It offers three 120mm TriCool fans, as well as a large 200mm TriCool exhaust fan to keep hard drives from overheating. A perforated front bezel allows for maximum air intake, too. A useful tray is located on the case's top, which creates a perfect spot to stow your MP3 player, digicam, or any other CE device you use in conjunction with your computer. Two USB 2.0, one FireWire, and audio in/out ports are all located next to the case tray. With such easy access, you'll be able to digitize video or upload photos and files in no time.

Other features include:

- A classic black finish
- Fan mounts for additional cooling needs

- Two front-loaded hard drive disk cages for up to six hard drives
- Input/output ports top-mounted on the case for trouble-free access
- Seven expansion slots allow you to add new memory and graphics cards as needed
- 18.4x8.1x19.4 inches (HxWxD)

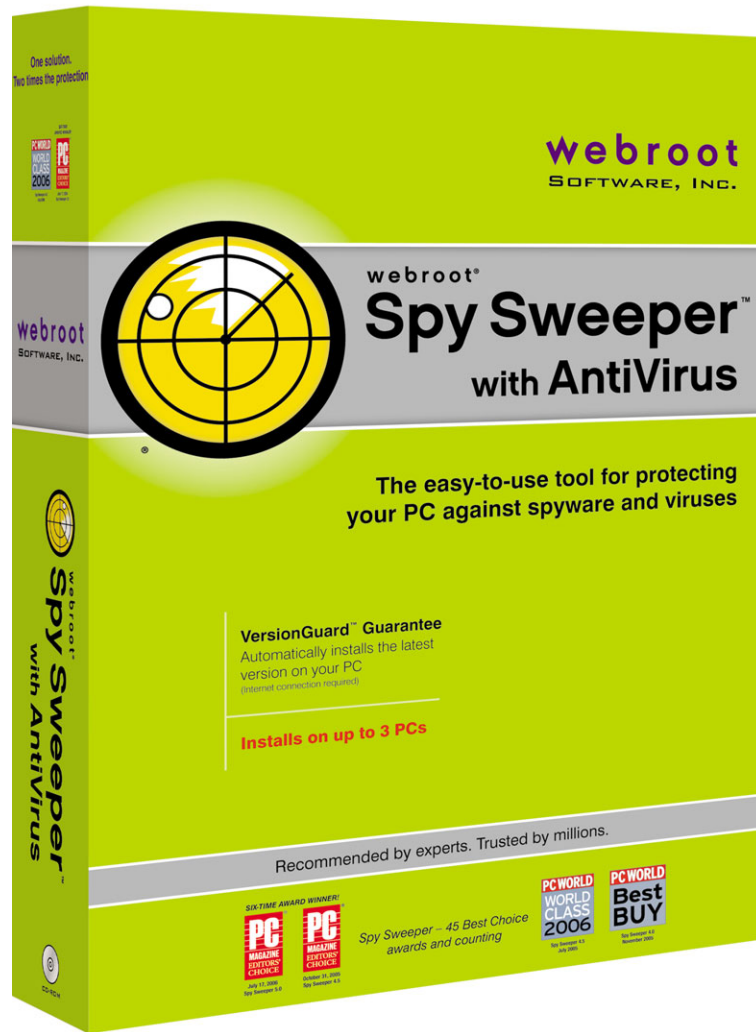
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The Power of You

**Webroot® Spy Sweeper™
with AntiVirus**

MSRP: \$49.95

www.webroot.com

Available at select Best Buy™ stores
and www.bestbuy.com



Keep Your PC Spyware- & Virus-Free With One Click

Webroot® Spy Sweeper with AntiVirus offers combined protection at a better value than suites or two standalone products. It provides complete security from the two most dangerous threats in a single, easy-to-use solution.

With advanced detection and removal capabilities, even the most dangerous files are removed in a single sweep. You will not have to scan and restart your PC repeatedly with Webroot Spy Sweeper with AntiVirus—one sweep, and your PC is clean.

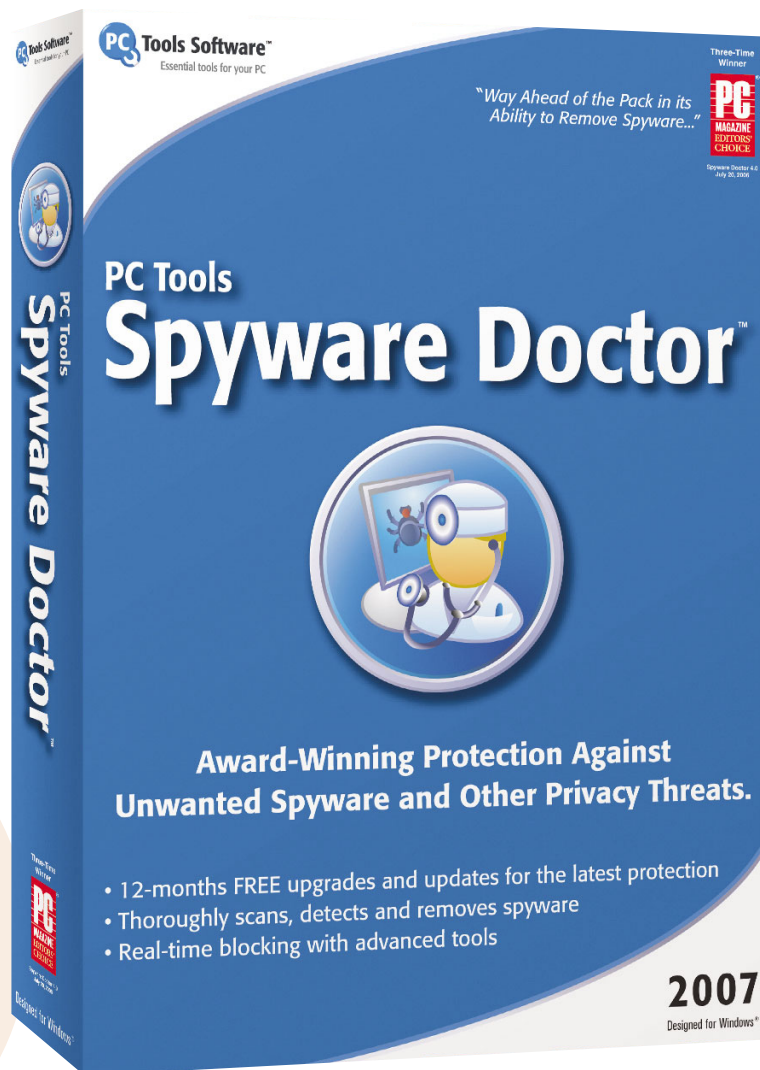
Additionally, Webroot Spy Sweeper with AntiVirus uses advanced smart shields that can detect, remove, and block Internet viruses, spyware, and worms in real time—ensuring overall system performance.

Other features include:

- Award-winning antispyware and powerful antivirus protection
- Effective, easy-to-use protection from the most dangerous Internet threats
- Automatic defense updates keep you protected from the latest threats
- Windows Vista™ compatible

webroot
SOFTWARE, INC.

PC Tools' Spyware Doctor
MSRP: \$29.95
www.pctools.com/spyware-doctor
Available at select Best Buy™ stores
and www.bestbuy.com



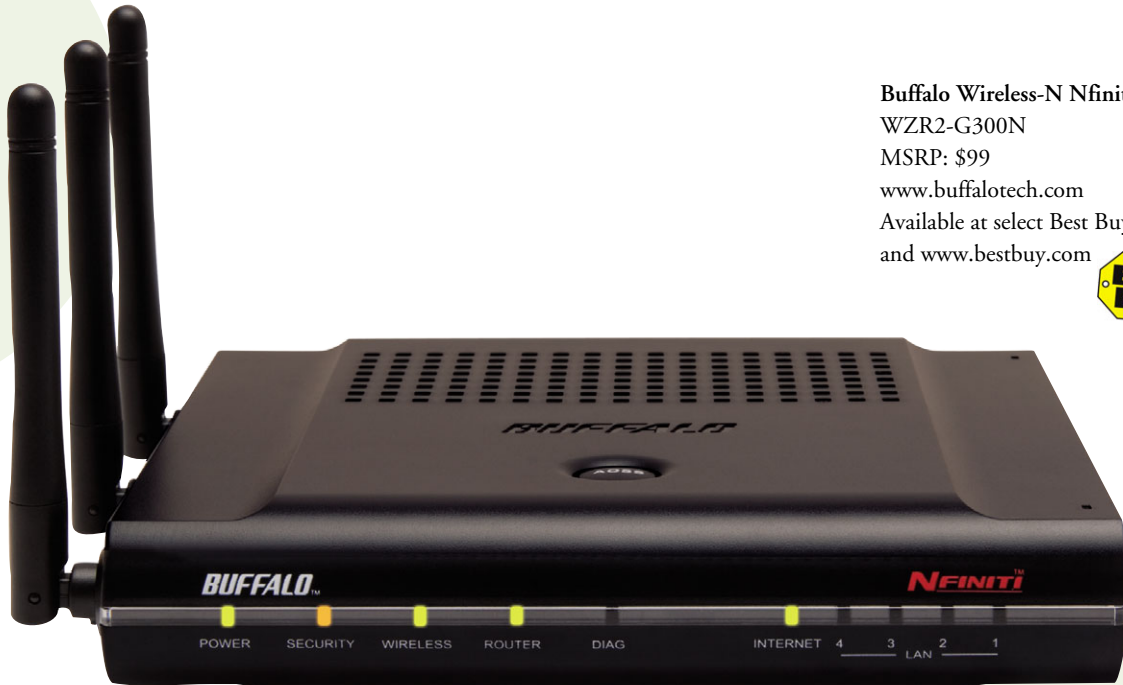
Award-Winning Spyware Protection At A Great Price

Spyware can pose a serious risk to your PC as well as your privacy, so it's wise to invest in antispware protection. Spyware Doctor uses state-of-the-art spyware and adware detection and blocking technology to ensure that your PC is safe. With Spyware Doctor's system scans, you can detect and remove the most advanced threats before they can damage your PC. Spyware Doctor features intelligent automatic protection, which makes the software simple for anyone to use, and it's offered at an affordable price.

Other features include:

- Detects, removes, and blocks spyware and adware threats
- Recommended by experts globally
- Daily updates to ensure you are always protected
- Easiest to use with intelligent automatic protection
- FREE customer support for all users
- 100% money-back guarantee

PC Tools Software
Essential tools for your PC



Buffalo Wireless-N Nfiniti Router
WZR2-G300N

MSRP: \$99

www.buffalotech.com

Available at select Best Buy™ stores
and www.bestbuy.com



Perfect For High-Definition Media Streaming

Make security a snap and high-definition media streaming problem-free with Buffalo's Wireless-N Nfiniti Router WZR2-G300N. With great coverage and superior speed, the Nfiniti Router operates up to 10 times faster than standard routers, making it ideal for streaming your movies and music; sharing an Internet connection; transferring photos and data; and gaming online. Conveniently change between router and access point modes with the flip of the Nfiniti Router's external switch and benefit from a simple Web browser configuration, built-in DHCP server, and 4-port 10/100 auto-sensing switch. Its AOSS (AirStation One-Touch Secure System) lets you easily set up and maintain security parameters (it supports WPS, WPA2, WPA [TKIP, AES], and 128-/64-bit WEP security standards).

Other features include:

- Designed to 802.11n Draft 2.0 specifications
- 6 x 1.3 x 5.9 inches (HxWxD) and less than 11 ounces
- Supports connections up to 300Mbps
- AOSS (AirStation On-Touch Secure System) for easy security setup
- Supports WPS, WPA2, WPA (TKIP, AES), and 128-/64-bit WEP security
- Includes NAT/SPI Firewall and Intrusion Detector
- External switch to toggle between router and access point modes
- Built-in DHCP server and 4-port 10/11 auto-sensing switch
- Works seamlessly with Nintendo DS Wi-Fi and Intel Hub Connect Technology

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Special Product Section

Nokia E62 for AT&T
MSRP: \$299
www.nokia.com
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and www.bestbuy.com



Work Anywhere, Anytime

Keep your productivity up to speed with the Nokia E62 for AT&T, one of the thinnest smartphones on the market. Measuring less than 3/4-inch thick, the Nokia E62 features Bluetooth wireless technology, an MP3 player, a Web browser, as well as full-featured email support for BlackBerry Server and Microsoft Exchange ActiveSync. Being away from the office won't be a problem with the E62's Symbian OS 9.1; full QWERTY keyboard; and the ability to edit Word, Excel, and PowerPoint documents. The E62's color display shows over 16 million colors, and although this smartphone can offer up to 330 hours of battery talk time, it will self-adjust its screen to save battery life.

Other features include:

- Super-thin smartphone with full QWERTY keyboard
- 4.6 x 2.8 x .6 inches (HxWxD) and 5 ounces
- Compatibility with Bluetooth accessories
- A built-in MP3 player
- Sync over-the-air with Complete Calendar Solution
- A Web browser that lets you view Web pages in their entirety
- Full document editing capabilities and viewing support for PDFs

NOKIA



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Wi-Fi For The HD Era

The Wireless-N Nfiniti Router Shifts Your Media Into High Gear

The most vital component of a networked home theater isn't your HDTV, your media extender, or your computer. It's the network itself. And for that reason, most HD gurus will tell you to avoid Wi-Fi for streaming all but standard-definition video, photos, and music. Wired networks, they'll argue, offer vastly superior bandwidth to that which 802.11b, 802.11a,

or 802.11g can offer. But most of us cringe at the thought of poking holes in our walls to install wires for such a setup. Fortunately you can leave the hole-poking to the gurus; there's a better Wi-Fi option on the horizon that you can start enjoying today.

When assembling your next network, look closely at Buffalo Technology's Wireless-N Nfiniti Router WZR2-G300N (\$99; www.buffalotech.com) for the network's nerve center. The Wireless-N Nfiniti Router employs the newest iteration of Wi-Fi technology, called 802.11n,

to deliver throughput comparable to that of a wired LAN. The Nfiniti is capable of a peak 300Mbps (megabits per second) data rate, which is five times faster than what you can get with 802.11g-based equipment. The new router also boasts ranges up to twice those of the previous generation of Wi-Fi equipment, so no need to worry whether you can use your notebook out by your pool anymore.

802.11 Then & Now

In the earliest days of the wireless revolution, the IEEE (Institute of Electrical

and Electronics Engineers) created the 802.11 WLAN (Wireless Local Area Network) standard. The organization went on to approve faster and more secure iterations of the wireless technology, known as 802.11b, 802.11a, and 802.11g. 802.11n is the next phase of Wi-Fi that boasts the fastest and most secure technology yet. However, most industry experts don't expect the 802.11n standard to be finalized until late 2008 or early 2009.

In the meantime, manufacturers have been producing hardware based on the first "draft version" of the 802.11n specification for more than a year. Buffalo's Wireless-N Nfiniti Router is based on this first revision but is also "Draft 2.0 ready," meaning that it supports the new features detailed in the second draft of the 802.11n spec approved earlier this year. Key aspects of Draft 2.0 include a stronger Wi-Fi signal; Internet connection sharing without degradation; and enough bandwidth to handle HD video, surround-sound audio, voice calls, video games, and other multimedia applications.

N-finitely Improved

According to Buffalo's Product Marketing Manager Brian Verenkoff, the new router costs approximately \$30 less than most of the 802.11n routers currently for sale. But besides the significantly reduced price, Buffalo made several changes between last year's pre-N wireless equipment and the new Wireless-N Nfiniti Router. The new unit has a black chassis, features a slimmed-down form factor, and sports a new horizontal design. To improve reception, you can adjust the three antennas located on the left side of the device. Buffalo also included a built-in 4-port 10/100 switch, which lets you connect up to four additional wired devices. Ten LEDs on the front of the router let you determine the device's status at a glance.

What You Need To Stream HD

To take advantage of Buffalo's new router and the benefits of 802.11n, make sure your entire network consists of hardware that conforms to the superior standard in Buffalo's Wireless-N Nfiniti Router. To guarantee interoperability, components have to be from the same manufacturer or Draft 2.0 CERTIFIED. Remember, your network can only move data as fast as your slowest component allows. Because the Nfiniti only features 10/100 Ethernet ports, data will pass through the router's wired port at 100Mbps or less (even though the 802.11n standard is theoretically capable of exceeding 100Mbps). Here's a short list of what you'll need.

- The Buffalo Wireless-N Nfiniti Router WZR2-G300N
- A 10/100 Ethernet port on your computer or media server
- 10/100-capable Ethernet cable between the router and computer or media server
- An 802.11n-capable wireless adapter connected to your media extender, HDTV, or other entertainment device

Data Rate vs. Throughput

When discussing the "speed" of a given Wi-Fi device, it's important to make a distinction between the unit's theoretical maximum data transfer rate and what it actually does (the actual throughput). A Wi-Fi device's data transfer rate refers to the speed at which data is transmitted to and from the device. For most 802.11n products currently available, including Buffalo's WZR2-G300N, this number hovers around 300Mbps (megabits per second), which includes the video or audio media you're streaming, as well as a large chunk of overhead and control data necessary to maintain security and reliability.

Alternately, the term "throughput" refers to the amount of video, music, Internet traffic, or gaming data that can pass through your wireless network under real-world conditions. For instance, even though 802.11g networks offer 54Mbps data rates, the actual throughput is typically less than half the speed of the data transfer rate. Below, we've listed the data transfer rates as well as ballpark throughput rates you might encounter under real-world conditions. Your results may vary.

Wi-Fi Standard	Data Transfer Rate	Throughput Rate
802.11b	11Mbps	4Mbps
802.11a	54Mbps	23Mbps
802.11g	54Mbps	19Mbps
802.11n	300Mbps	82Mbps

Ease of use. The top of the unit features Buffalo's innovative AOSS (AirStation One-Touch Secure System) button; simply press it, and the Buffalo Wireless-N Nfiniti Router searches for other AOSS-compatible devices. AOSS technology, which lets even non-tech-savvy users network wireless devices with ease,

isn't exclusive to Buffalo's hardware: The Nintendo DS, PSP (PlayStation Portable), and PS3 all support the "one-button" AOSS technology, too. If a compatible device is within the wireless umbrella and similarly activated, the system automatically configures security settings and establishes a connection.

Stream HD content. Another benefit of Buffalo's 802.11n router is that it employs multiple antennas and multiplexing techniques (which means a device sends multiple signals at the same time) to increase the effective range and data rate of wireless communications. In single-antenna networking devices, multiplexing's ability to increase data rates are typically offset by an increase in interference. 802.11n lets Buffalo's router, with its three antennae, send multiple data streams simultaneously to cut down on interference, increase bandwidth, and improve reliability. This is one of the key technologies that enables 802.11n-compliant gear to stream HD content so effectively.

Security. Buffalo has addressed the security concerns that go hand-in-hand with wireless networks. The router supports several security protocols, all of which keep your data hidden from would-be thieves. Other security features include Dynamic Packet Filtering and Intrusion Detector, which work together to monitor and filter incoming data traffic to prevent malicious users or malware from attacking your computer.

Plays Well With Others

The big question with early 802.11n, or pre-N, networking gear was whether it

would work when paired with 802.11n hardware from different vendors. The Wi-Fi Alliance (www.wi-fi.org), an authoritative, nonprofit industry association devoted to supporting the growth of WLAN technology, recently introduced a new 802.11n Draft 2.0 certification program to ensure interoperability among 802.11n hardware. As a result, any

802.11n product adorned with the "Wi-Fi CERTIFIED" logo supports Draft 2.0's specs and has been tested to work with other certified hardware.

Although the Wireless-N Nfiniti Router hasn't been tested for Draft 2.0 certification (testing is slated to begin after we go to press), Brian Verenokoff confirmed that Buffalo plans to offer a firmware upgrade to bring the router into compliance "should anything come up" during testing.

As you might expect, the 802.11n Buffalo Wireless-N Nfiniti Router is backward compatible with 802.11b and 802.11g equipment. Support for operating systems includes Windows 2000/XP/Vista. The unit includes a two-year warranty and 24/7 technical support. **PG**

BY ANDREW LEIBMAN



Streaming Video Over Wi-Fi

The current Wi-Fi standards generally let you stream video in some capacity. But if you want to stream HD, forget about using an 802.11b network. If you're shooting for 1080p HD, 802.11n is the only way to go. Below is a table that describes the typical speeds necessary for sending various types of SD and HD video over a network and the corresponding Wi-Fi standard you'll need to support each one.

To Stream . . .	At Speeds Of . . .	You'll Need . . .
480i SDTV Quality Video	2 to 5Mbps	802.11b/a/g/n
480p DVD Quality Video	6 to 8Mbps	802.11a/g/n
1080i/720p HDTV Quality Video	18Mbps	802.11a/g/n
1080p HDTV Quality Video	20Mbps or more	802.11n

ce news

COMPILED BY RACHEL DEROWITSCH

Best Buy Expands Mobile Store Concept

Following a successful trial run of its Mobile stores in New York City, Best Buy (www.bestbuy.com) announced that it will expand its Mobile store concept in almost 200 locations throughout the United States.

Starting this summer, Best Buy will add standalone Mobile stores in Baltimore, Boston, Chicago, Minneapolis, Philadelphia, Raleigh-Durham, and Washington, D.C. In addition, the company will upgrade the mobile sections of 170 existing Best Buy stores. Both the standalone and store-within-a-store mobile locations will include more than 90 handsets; multiple options for carriers (such as Sprint, AT&T, etc.); phone accessories; and a variety of services, such as repairs and loaner phones, for customers.

"Very few people say they have had a positive experience purchasing their mobile phones, but it doesn't have to be that way," said David Sprosty, chief executive officer of Best Buy Mobile. "Customers deserve a pressure-free, personalized, one-stop shop that puts the emphasis on them, not on the latest gadget or service plan."

Philips Electronics Introduces Green Tick Logo For Energy-Efficient Products

Conscientious buyers who want to consume a little less energy when enjoying their electronics devices can look for a



green tick. No, it's not that little woodland critter you'd normally avoid. This tick is the Philips Green Tick, a logo that Philips Electronics (www.philipsusa.com) is putting on its more energy-efficient products.

Seven of Philips' flat-screen TVs carry the Green Tick logo, and the company plans to double that number by the end of this year. In addition, Philips will expand its energy-efficient line of products to include DVD recorders, home-theater systems, wireless devices, and portable accessories.



What Kind Of Tech User Are You?

A recent survey by the Pew Internet & American Life Project attempted to classify American adults into distinct groups based on why and how often they use ICT (information and communication technology) and contemporary electronic devices, such as cell phones and computers.

The 10 groups that researchers identified generally fit in three broad categories: Elite Users (31%), who are "heavy and frequent users" of the Internet and cell phones; Middle-of-the-Road Users (20%), who use ICT more for communication and less for self-expression; and Few Tech Assets (49%), whose use of modern gadgets is, at most, at the periphery of their daily living.

Here's how the three general categories broke down:

Elite Tech Users

- Omnivores 8%
Have the most information gadgets and services.
- Lackluster veterans 8%
Frequent Internet users; less avid about cell phones.
- Productivity 8%
Positive about the role technology plays in every aspect of enhancing their lives.
- Connectors 7%
Frequent Internet and featured-packed cell phone users.

Middle-of-the-Road Users

- Mobile centrics 10%
Fully embrace cell phones, but only occasionally go online.
- Connected but 10%
Find their connectivity intrusive and information somewhat burdensome.

Few Tech Assets

- Off the network 15%
Older adults who are content with old media.
- Light but satisfied 15%
Their technology doesn't play a central role in their lives.
- Indifferents 11%
Use ICTs only intermittently; find connectivity annoying.
- Inexperienced 10%
Occasional tech users who might do more with ITCs if they experimenters had more experience.

You can take a quiz at the Pew Internet & American Life Project Web site (www.pewinternet.org/quiz) to see which group you belong to.

Thule Acquires Case Logic

Swedish company Thule (www.thulegroup.com), which sells products that help outdoor enthusiasts transport their gear, such as bikes and skis, has completed its purchase of Case Logic (www.casellogic.com), an American company that makes cases for CDs, DVDs, MP3 players, cameras, and notebooks, as well as backpacks, luggage, and automotive organizational products.

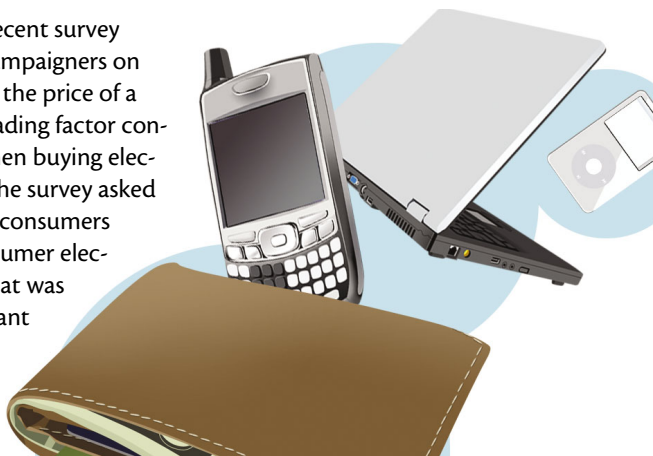
According to Anders Pettersson, president and CEO of Thule, both companies are serving the same consumer groups—active individuals who want accessories so they can take along their electronic devices and other equipment wherever they go. "A large percentage of Case Logic's products are offered around or inside the car, where Thule has its strong base," he says.

Case Logic has annual sales of about \$140 million.



Price Is Leading Factor For Tech Shoppers

According to a recent survey conducted by Campaigners on behalf of TWICE, the price of a product is the leading factor consumers weigh when buying electronic gadgets. The survey asked more than 2,900 consumers shopping in consumer electronics stores what was the most important factor for them when making a tech purchase.



Top Factors When Buying CE Devices

1. Price	23%
2. Quality of product	21%
3. Sales associate recommendation	15%
4. Having latest technology	15%
5. Positive reviews	13%
6. Brand	11%
7. Other	2%

Canon Tops U.S. Shipments Of Digital Cameras

Canon retained its top spot in the U.S. digital camera market, according to first-quarter stats from research analyst company IDC. Canon accounted

for 21% of all digital cameras shipped in the United States for the first three months of this year. Kodak, which ranks third, enjoyed its first quarter of positive growth in unit shipments after five consecutive negative quarters.

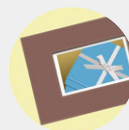
Overall, shipments of digital cameras—including D-SLRs—grew 6% in Q1 2007 compared with Q1 2006, with 4.9 million units shipped.



Top Digital Camera Brands Shipped In Q1 2007

1. Canon	21%
2. Sony	16%
3. Kodak	13%
4. Samsung	11%

tidbits



Over 112,000 digital picture frames were sold the week leading up to Mother's Day, accounting for nearly \$12 million in sales.

Source: The NPD Group

Sales of OLED (organic light-emitting diode) TVs will increase from 8,000 units in 2007 to



about 1.2 million units in 2012.

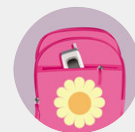
Source: iSuppli



Globally, 35% of software installed on PCs last year was pirated, equaling almost \$40 billion in revenue losses. The United States had the lowest piracy rate (21%) but the highest revenue loss (\$7.3 billion) of all countries studied.

Source: IDC

Kids begin using CE devices at an average age of 6.7 years, down from 8.1 just two years ago.



Source: The NPD Group



65% of portable media players shipped this year will have flash memory instead of a hard drive, up from 22% last year.

Source: iSuppli

Let The Games Begin

Perfect HDTVs For Your Consoles



One of the best ways to show off an HDTV is to connect an Xbox 360 Elite (\$479; www.xbox.com) or PlayStation 3 (\$599.99; www.playstation.com/PS3) to it and pop in one of the latest games, all of which support breathtaking, high-definition output. The PlayStation 3 can display games and BDs (Blu-ray Discs) in true 1080p out of the box, and it also upconverts standard DVD movies that use 480p to 720p, 1080i, and 1080p resolutions. Upconversion doesn't add detail to the original signal, but it can dramatically improve the way DVDs look on most 1080p HDTVs.

Xbox 360 users need the HDMI output on the latest Xbox 360 Elite or the VGA

HD AV Cable (\$39.99) for previous versions to enjoy 1080p output from games out of the box. Xbox 360 owners can also watch HD-DVD movies via the optional HD-DVD player (\$199.99).

Some HDTVs are better than others when it comes to getting the most out of today's hot games, and there are two main things, 1080p resolution and HDMI inputs, to pay attention to if you want the perfect marriage between your next-gen console and your HDTV.

The High-Def Dif

1080p represents the highest resolution currently supported by HDTVs. It allows for more detailed video than competing

720p technology and uses progressive-scan technology to display vibrant images that don't flicker instead of the interlaced technology used by 1080i. Most flat-panel plasma and LCD TVs are great for gaming because they do a good job of handling fast motion, and sets such as the 46-inch Sony Bravia KDL-46XBR2 XBR-series LCD Flat Panel HDTV (\$3,299.99; www.sony.com) have the perfect combination of gaming-friendly features.

If you opt for a rear-projection DLP set, make sure it has the latest color-wheel technology, or rainbow-colored streaks may result from the fast, on-screen motion. The 61-inch Samsung HL-S6187W (\$3,599; www.samsung.com) is a good example of a DLP set that satisfies the demanding needs of gamers.

The Perils Of Plasma

If you use a plasma set, be sure to enable any anti-burn-in technology it has to reduce the chance that static elements on the screen, such as health bars or gauges, don't etch themselves into the screen, leaving a permanent ghost image. Consoles also have settings that dim the screen after a fixed period of inactivity, so enable those, as well. Newer plasma sets are much less susceptible to burn-in than were older sets, but it can still happen. ●

What About The Wii?

Nintendo's Wii (\$249.99; www.nintendo.com) is a fantastic piece of technology in all but one regard: It doesn't support HD video output. If you use the console with an HDTV, be sure to enable widescreen mode and also spring for the optional component video cables (\$29.95), which allow for progressive-scan 480p output that is dramatically sharper and clearer than the interlaced 480i output provided by the included composite video hookups. ●

One Cable, Multiple Uses

Make sure the HDTV you buy has multiple HDMI inputs because that's the only way to receive true digital 1080p input from today's consoles. Other cables that support HD resolutions, such as component and DVI, don't handle the digital copy-protection studios use to lock down 1080p movie content, but HDMI does. The 53-inch Sharp Aquos LC-52D82U (\$4,099.99; www.sharppusa.com) has three HDMI inputs, enough to connect your Xbox 360, PS3, and an HD cable box simultaneously. People who say there isn't enough HD content currently available have obviously never seen a killer setup like this one. **RG**

BY TRACY BAKER

Going Old School *With A New HDTV*

Use Aging Components With Your New Television

Although you usually want to upgrade your other audio/video components when you buy a sleek new HDTV, you can save some cash by using the set with stuff you already have. Whether you shudder at the thought of transferring boxes of VHS tapes to DVD or are wondering whether your old stereo will work with your new television, chances are good that there's a way to work things out.

Video Equipment

VCRs and older DVRs such as the early TiVos that don't support high-definition output will still work with a high-definition TV, but the video quality won't be anywhere near that of a true high-def feed. When connecting these types of devices, use S-Video cables whenever possible because that technology is visibly superior to composite or RF (radio frequency) cables.

Some high-end audio receivers, such as the Harman Kardon AVR-347 (\$899; www.harmankardon.com), can accept an incoming S-Video or composite signal and upconvert it to a higher-quality component or HDMI signal. Upconverted video won't be comparable to the signal you get from a DVD player, but it should be significantly better than simply connecting a VCR or an older, non-HD DVR directly to the back of the HDTV.

Video that comes from VCRs and most DVRs is interlaced, which is inferior to



Harman Kardon AVR-347 (\$899; www.harmankardon.com)

the progressive-scan video that most HDTVs are designed to display. An HDTV must take an interlaced signal and upconvert it to progressive-scan to display it, and most HDTVs have special upconversion modes designed to make interlaced video look as good as possible. Check the manual that came with your TV to see if it automatically detects interlaced vs. progressive-scan video and automatically upconverts it, or if there is a special setting you must manually enable in order to watch interlaced video.

Audio Equipment

The latest audio receivers are designed to handle HDMI connections, which deliver the highest-quality all-digital video and audio, but if you bought your receiver a year or more ago, you may not find any HDMI connections. If this is the case, run the HDMI cable from your cable box, video game console, or

other video output device directly to the back of the TV and use a separate cable to connect the video output device to your receiver.

Ideally, you should use coax audio or fiber-optic Toslink cable because those cables handle the Dolby Digital, Dolby Digital EX, DTS Digital Surround, and DTS-ES soundtracks found on most DVD movies and next-generation video games. If your receiver has inputs for composite audio cables (the red and white jacks), then the best you can do is Dolby Pro Logic, which takes a stereo signal and processes it so the audio comes out of more than two speakers. That's better than nothing, and you'll probably be too distracted by the larger-than-life picture from your new TV to notice that the sound isn't quite as good as what you'd get from the latest gear. **FG**

BY TRACY BAKER

Calibrate Your HDTV

Don't Skip This Important Step

According to Bayard Buetow, service manager for the Magnolia Home Theater (www.bestbuy.com), TV manufacturers often boost the televisions' brightness and contrast on showroom floors so the sets stand out among their competitors. Manufacturers aren't trying to deceive you, but you'll probably have to calibrate your HDTV so it looks good in your living room, too.

Calibrating your HDTV can help you achieve the stunning picture that first inspired you to go high-def. There are typically two methods of calibrating your HDTV: hiring a professional or making adjustments to the HDTV's OSD (on-screen display) menu yourself.

Do It Yourself

Before calibrating your HDTV, access the TV's OSD (typically, press Menu on the HDTV's remote) and set the contrast/picture, tint/hue, sharpness/detail/peaking, saturation/color/chroma, and brightness to the default settings (which are typically zero). Next, make sure the lighting in the room is set to the levels at which you generally watch TV.

THX Optimizer. The THX Optimizer is a basic calibration tool you'll find on THX-certified DVD movies produced after 2000. Use the search engine at THX (www.thx.com/home/dvd/search.html) to see if your DVD has this tool. If it does, access the THX Optimizer and follow the instructions to adjust your HDTV. The THX Optimizer displays test patterns so you can adjust the contrast, brightness,

Price Factor

Here are a few ways to calibrate your HDTV and the cost involved.

THX Optimizer: Free (with THX-Certified DVDs)

Avia: Guide to Home Theater: \$49.99

Magnolia Home Theater Optimization: \$300

color, tint/hue, sharpness, and aspect ratio (widescreen or fullscreen).

Avia. Ovation Multimedia's Avia: Guide To Home Theater (\$49.99; www.ovationmultimedia.com) is a comprehensive on-screen guide to calibrating your home theater and includes audio and video test patterns.



Hire A Pro

You can use the OSD to manually adjust the image settings, but calibration is more involved than making the artificial turf on Sunday's game look as green as you think it should. Although you may improve the HDTV's display yourself, calibration professionals, such as those at Magnolia Home Theater, can access

password-protected service modes to fine-tune the TV to ISF standards. Even if you were able to access your HDTV's service mode, Buetow says that these menus and options feature cryptic names and number in the hundreds. He warns, "a TV can be rendered unwatchable or inoperable if the adjustments are incorrectly set." Further, adjusting these settings may void your TV's warranty.

Most professional calibration experts use specialized equipment. For instance, the Magnolia Home Theater Optimization pros use the Sencore CP5000 color analyzer, which retails for about \$5,000. If you'd like to hire an ISF-certified pro from Magnolia, expect to pay about \$300 for the service.

Considering how much you've invested in your HDTV, a two-hour, \$300 service call is not a bad deal. The rep will calibrate your TV for the best picture possible, create settings for two inputs (such as a game console and a DVD player), adjust the surround sound, and optimize the speakers' sound. Although the rep will show you how to operate the entire system, the calibration service does not include repair to speakers or wires or programming universal remotes.

Bottom Line

To get the most from your investment, you should calibrate your new HDTV. Spending the money to hire a professional HDTV calibrator can get your HDTV looking its absolute best. **PG**

BY ANDREW LEIBMAN

home theater

Full-Immersion Viewing

Front Projection Home Theaters
Bring Out The Best In Movies

Sony's VPL-VW50

\$4,999.99

www.sonystyle.com



Times couldn't be better for today's movie buff. In this golden age of home electronics, the options for watching movies at home often exceed the quality available at your local cineplex. And there's no better way to deliver outstanding picture quality than with a front-projection system.

What Is Front Projection?

Front-projection systems are like a mini-theater for your home. Imagine a darkened room with a brilliant picture cast upon a screen that dwarfs the largest TV sets. Front-projection systems comprise two components: a front projector connected to your video source, and a projection screen that provides a consistent, reflective, optically correct surface on which to display the video.

Although HDTVs are becoming affordable for the average homeowner, nothing can compete with front projection when it comes to viewing high-definition video on large screens. With front projection, your screen size is limited only by the amount of available wall space (and the size of your wallet). Front-projection systems are ideal for re-creating the immersive, big-screen, theater experience.

Whether it's sports in high definition, a movie played on your new BD (Blu-ray Disc) player, or an old-school DVD, for especially large screen viewing, front-projection systems are one of the most cost-effective home-theater systems available.

How It Works

The concept behind front-projection theaters is not very different than the technology used in many theater multiplexes. A projector beams an image onto a screen designed to reflect back a brilliant, crisp image. Where theaters typically use analog film projectors, home front projectors are denizens of the 21st century—digital through and through.

Projectors come in three main flavors: CRT, LCD, and DLP. All three take a digital signal provided by your video source (DVD player, set-top box, or BD or HD DVD player) and project it onto your theater screen. CRT projectors were the pioneers in projectors but have been largely superseded for most consumers by their newer cousins, the LCD and DLP (digital light processing) projectors.

Prices for quality projectors used to be stratospheric, but technological advances have brought them down to Earth.

Although high-end CRT projectors can easily cost six figures, quality LCD and DLP projectors, such as Sony's VPL-VW50 (\$4,999.99; www.sonystyle.com), are available for under \$5,000.

Combine this with a high-quality film-screen, such as the 100-inch Luxus Deluxe ScreenWall from Stewart Filmscreens (www.stewartfilmscreen.com) available for \$2,300 at Best Buy Magnolia stores, and you'll have a high-performance projection system that'll wow your friends and family when you dim the lights.

What To Watch Out For

Projection systems provide the ultimate in viewing environments but aren't suited to all situations. They work best in dedicated home-theater rooms that have limited ambient light. If you're planning to use a brightly lit living room or family room for HD viewing, you'll want to skip a front-projection system. A better choice in this case would be an LCD or plasma HDTV that can cope with high levels of ambient light. You'll also want to plan to periodically replace the bulb on your projector. Depending on the make and model of projector you choose, replacement bulbs can cost upward of \$500.

What You'll Need

Regardless of which brand of projector or screen you buy, you'll need three additional elements for a successful front-projection theater. First, you'll need a room that can accommodate the screen size—one with limited ambient light. Second, you'll need a video source: a DVD player, BD or HD DVD player, or another video source to connect to your projector. Third, you'll definitely want a sound system because front projectors are video-only. ●

LCD vs. DLP

Today's dominant players in front projection fall into two camps: LCD and DLP. Although the differences between the two technologies used to be more prominent, the technologies have matured to the point where there are only a few minor differences between the two in terms of picture quality. LCD projectors sometimes suffer from "screen door" effect, where you can see grid-like pixelation on the screen, and DLP users used to see a rainbow-like effect in certain types of video. Both effects have been dramatically reduced in recent models, and the best way of selecting between the two technologies is to demo them in a home-theater store. ●

Dive In

Front-projection systems used to be limited to videophiles with deep pockets and a willingness to tinker. Fortunately for consumers looking for outstanding performance in their home theaters, front-projection systems are not only competitive with other HD systems but are also easy to install and use. Before you make any home-theater purchases, be sure to take a good hard look at a front-projection system. **FG**

BY CHRIS JACKSON

HDTV Shopping Tips

An HDTV Projector

BY MARTY SEMS



When you want a super-big HDTV picture without the super-big price, consider a projector. Tear out this page to take with you as you shop.

Many of the features, such as native resolution, that you would look for in a typical HDTV are also common to HDTV projectors. For instance, there are 1,280 x 720 (720i/p) and 1,920 x 1,080 (1080i/p) projectors on the market. But like most 720p HDTVs, a 1,280 x 720 projector may be able to downscale 1080i or 1080p video to 720i or 720p. Most HDTV projectors use either DLP or LCD technology, like a rear-projection HDTV.

Generally speaking, the farther a projector is from your screen, the bigger the image it will throw and the larger the screen will need to be. However, if a projector has a zoom lens, you can adjust the image to look bigger or smaller on the screen without moving the projector back or forth. The amount of adjustment the zoom lens will give you is called the **throw ratio range** or throw distance, and the wider it is, the better. For instance, a wide throw ratio range of 1.2 to 1.8 will give you more adjustment room than a 1.6 to 1.8 range.

The brightness of a projector's replaceable lamp becomes important if you want to watch TV without darkening the room or if you plan to install the projector relatively far from the screen. The more lumens, such as 1,500, the brighter the bulb; however, you can adjust many projectors' brightness levels to look better under different lighting conditions. Bright lamp settings require more cooling,

so make sure that a projector's fan won't be loud enough to interfere with your entertainment when you test it in your local Best Buy store. Also, check to see how long a lamp should last before you'll have to replace it, such as 3,000 hours, and what a replacement bulb will cost, such as \$339.

You'll probably have to mount your new projector near your ceiling instead of on a wall or stand directly across the room from the screen. Normally, this would cause the bottom of the picture to look wider than the top, so most projectors offer vertical keystone correction so you can adjust the image to look perfectly rectangular. Horizontal keystone correction compensates when the projector must sit slightly to one side.

A projector with a high contrast ratio, such as 10,000:1, should be able to make dark parts of the picture seem darker. However, because a white screen will reflect light from the room and adjacent, lighter parts of the picture, blacks and dark colors will never look as deep as they would on a CRT or plasma HDTV.

Manufacturers measure contrast ratios differently, so trust your eyes instead of a projector's specifications. When you're at your local Best Buy store to check out what projectors can do, look for bright, sharp images with good color and smooth motion.

SHOPPING CHECKLIST

☐ What is the projector's native resolution, in pixels?

☐ 1,280 x 720

☐ 1,920 x 1,080

☐ What HD formats can it display?

☐ 720i

☐ 1080i

☐ 720p

☐ 1080p

☐ What type of display technology does the projector use?

☐ DLP

☐ LCD

☐ How bright is its lamp, in lumens?

☐ 800

☐ 1,500

☐ 1,000

☐ 2,200

☐ 1,200

☐ How loud is its fan, in dB (decibels)?

☐ 25

☐ 29

☐ 32

☐ How long will its lamp last, in hours?

☐ 25

☐ 29

☐ 32

☐ What type of keystone correction does it allow?

☐ Vertical

☐ Horizontal

☐ Both

HDTVs

5 Must-Have Accessories



1 Invariably, as you head toward the HDTV section of your local consumer electronics store, you'll walk right past shelves of bland-looking HDTV accessories. Sure these accessories have multichannel audio, gold-plated connectors, nitrogen-injected insulation, and fully-articulating mounting arms, but they just can't compete visually with their big-screen, flat-panel HDTV counterparts. Despite outward appearances, however, there are a handful of accessories that are absolutely vital to getting the most from your HDTV.

1 HDMI cables. Who wants a living room full of cables and cords? Certainly not your mom; and besides, those wires can be a nuisance (and a danger) to pets and little ones. HDMI cables are all-in-one cords that carry uncompressed digital audio and digital video signals to and from your HDTV and its components, eliminating the need for separate cords for video and audio. Acoustic Research's AP085 6-foot HDMI cable (\$99.99; www.araccessories.com) is the perfect accessory to pass your digital signals—nicely and neatly, of course—among your devices. Be sure to budget for this must-have.

2 Wall mount. There's nothing better than showing off your home videos and photos when friends and family are over. An elegant way of doing so is by displaying them on your HDTV that's mounted on a wall, turning your videos and photos into veritable works of art framed by your TV's sleek bezel. A wall-mounted HDTV also gives you more floor space and keeps your living room neat and clutter-free. Once the mount and TV are installed (you can take advantages of Best Buy's Magnolia Premium Home Theater Installation service), many mounts will let you tilt and rotate the HDTV to ensure a perfectly level picture.

3 Stand. If you'd rather not drill holes in your home's newly painted walls, or if you live in a condo and your walls are cement or cinderblock, a stand is a better option than a wall mount. Today's A/V furniture manufacturers offer gorgeous, showroom-style stands in a variety of materials, including warm wood (available in stains of many colors), minimalist brushed steel, and clean-looking glass. You can get a triangular corner model, a high-backed cabinet that includes a mount for flat-panel HDTVs, and stands with shelves to accommodate the rest of your A/V gear.

4 Surround-sound system. We're willing to bet that you've struggled with keeping volume levels steady when you're watching something on TV. There's nothing more annoying than being startled by a loud commercial in the middle of your favorite show; likewise, nothing is more jolting than when a quiet, serene part of your favorite movie is suddenly interrupted by a too-loud scene change. Eliminate this by investing in a good-quality surround-sound system, which will prevent volume extremes by automatically equalizing the audio in movies and HD broadcasts that are capable of 5.1 or better surround sound.

5 Universal remote. Let's face it: Everyone—your mom, dad, grandma, and even the kids—gets remotes mixed up when there's one for each component in your home-theater system. Get rid of that mountain of plastic with a programmable universal remote, which lets you control everything with a single device. The Logitech Harmony 880 Advanced Universal Remote (\$249.99; www.logitech.com) lets you control 15 devices in your home-theater system at once. Better still, you'll keep your living room clean and clutter-free. **PG**

BY ANDREW LEIBMAN

Buying An HDTV

Top 5 Things To Know

Buying an HDTV is a big decision. There are myriad options and no shortage of accessory choices. And let's face it—you're spending a whole lot of money. We'll help you cut through the clutter and identify the five most important things to consider when shopping for the right set for you and your family.

1 Buy better cables. Very few home-theater components, including the most expensive televisions and DVD players, come with quality cables. Plan to spend an extra hundred dollars or so purchasing cables for the highest-resolution formats each device supports. HDMI, DVI, and

component are all HD-compatible options. HDMI, the newest HD interface standard, eliminates cord clutter with a single, slim cord that connects your DVD player or digital television receiver to your television. It also supports all high-definition resolutions (720p, 1080i, etc.) while maintaining a digital signal throughout the process. Whatever option you choose, don't buy the cheapest or shortest cable on the shelf. Low-quality construction invites electrical interference and unreliable connections, and the cables may not withstand normal wear and tear as well as more expensive ones.

2 Don't hang it yourself. In most cases, it's best to hire a professional to hang your HDTV. A successful wall mount on regular drywall requires the right bracket, a correct alignment to wall studs, and a reliable attachment between the TV and its bracket. Brick or cinderblock walls provide an even greater challenge. Most electronics retailers offer affordable installation services and usually guarantee their work. Unless you're willing to bet your big new investment on your carpentry skills, bring in the experts.

3 Make yourself at home. Unless your family room is of warehouse proportions with walls of shimmering TV sets, you may not get the most realistic impressions of HDTVs at the store, unless, that is, you take advantage of Best Buy and other retailers' efforts to recreate realistic home environments in some stores. Try to preview your prospective HDTV in realistic surroundings and bring some of your favorite movies to see how they look on your set before you buy.

4 Size it up. Finding a set that works in your room is a crucial part of your purchase. A small room and a couch near the TV means you should invest in a fairly small HDTV; a larger space with plenty of seating for friends and family requires a bigger screen. Use the three-to-five rule to calculate your optimal screen size. Measure the distance, in feet, from your TV's location to your viewing position. Multiply that number by three, and then by five. Those numbers represent the minimum and maximum screen sizes, measured in inches diagonally, for that space. For example, a 10-foot span from your TV to sofa will accommodate screens between 30 and 50 inches.

5 Color and calibration. There's more to brilliant, sharp pictures than screen resolution; color reproduction and calibration make a big difference, too. When you're in a store considering an HDTV, be sure the colors are consistently true to life. Blacks shouldn't appear gray, bright areas shouldn't wash detail away, and high-paced action scenes shouldn't have jagged edges. Calibration is another important factor to keep in mind; this will ensure your HDTV's settings will be far better than the showroom settings many televisions ship with. Most retailers offer professional calibration (such as Best Buy's Magnolia Home Theater Optimization package) that uses special equipment otherwise unavailable to consumers; in most cases, such calibration is your best bet. However, there are calibration DVDs that can walk you through the process yourself. **FC**



BY GREGORY ANDERSON

Plasma & LCD TVs

What's The Difference?



Flat-panel televisions continue to top electronics shoppers' wish lists. However, plasma and LCD sets are based on two very different technologies, so knowing their advantages and disadvantages will help you make an informed decision about which to bring home.

BY BRIAN HODGE

Plasma

Pros

- Because plasma TVs are based on phosphorescent screen technology, their pictures most resemble those of tube TVs in terms of brightness, color depth and shading, and picture clarity.
- Plasma still has the edge over LCDs on contrast ratio (often as high as 10,000:1), black levels, and reproducing subtle color shadings, particularly in dim scenes.
- Pixel response is very rapid, so fast-moving imagery shouldn't blur.
- Plasma sets are generally more affordable in larger screen sizes—say, over 50 inches.
- Although this is a more subjective evaluation, many viewers find that plasma sets do a better job of scaling up lower-resolution standard-definition TV signals.

Cons

- Some plasmas consume more electricity and put out much more heat during use than LCDs.
- At higher altitudes (above 6,500 feet), lower air pressure can cause the set to produce a buzzing noise similar to a neon sign.
- Although it's less likely now than with older sets, plasmas (usually cheaper, low-quality models) can still be susceptible to burn-in from static images such as stock-ticker bars and video-game gauges.
- With sets of equivalent size, plasmas are much heavier than LCDs, which can affect plans for wall mounting, and they can also be harder for one person to move.

Plasma Is Best For:

- Movie buffs
- Sports fanatics
- Viewers shopping for a large set
- Viewers prepared to pay for professional installation

LCD

Pros

- LCDs run cooler and often require less power to operate than plasma TVs.
- LCDs use a screen coating that reflects little ambient light, so glare and washout aren't a problem even under bright lighting conditions.
- There's no chance of image burn-in.
- Many LCD TVs have PC-compatible connections so the set can double as a computer monitor.
- With a few exceptions, LCD is your main choice for sets 40 inches and under. Most new under-40-inch plasmas come from off-brands that may be more of a gamble than sets from the major names.

Cons

- Pixel response may be a tad slower than plasma, so fast-moving imagery might blur.
- New LCDs may have stuck pixels, which show up as bright pinpoints of light. And a hard rap on the screen may break crystals and leave a permanent dark spot.
- True blacks can be difficult to reproduce because the fluorescent backlight still shines through the pixel grid (although some of the newest models are starting to address this by turning off the backlight in select screen areas).
- After a few years of use, the aging backlight may shift color somewhat, forcing the user to recalibrate the set.

LCD Is Best For:

- Avid gamers
- Viewers with brightly lit rooms
- Viewers shopping for a smaller set
- Viewers who want to do their own no-fuss installation
- Computer users

HDTV Glossary

B alderdash! OK, HDTV jargon isn't *that* bad, but there are a few terms every shopper should know. Here's your cheat sheet.

aspect ratio—Put simply, it's the shape of the TV's screen. An HDTV has a wider picture than a traditional TV of the same vertical screen height. An HDTV has a 16:9 aspect ratio, meaning that if its screen were 16 inches wide, it would be 9 inches tall. A regular 4:3 TV screen would be only 12 inches wide at the same 9-inch height.

HDMI—High-Definition Multimedia Interface is a new type of cable connection. It can carry both high-resolution video and uncompressed, multichannel audio among HDTVs, home-theater systems, and other components. HDMI cables are pricy, but they maintain top picture and sound quality.

HD tuner—Some more expensive HDTVs have a built-in tuner for receiving local high-definition broadcast TV channels. Your TV doesn't need an HD tuner if you have cable or satellite service. Separate HD tuners and antennas are available for HDTVs without them.

interlaced—When an HDTV displays an interlaced image, as in 1080i or 720i resolutions, it really shows you every other horizontal line of a frame of video (called a field) at a time. Sixty times a second, the TV displays the other field of the frame, meaning the lines not shown in the previous field. Interlaced video can seem to flicker and cause moving objects on-screen to have blurred edges.

LCD—Like a notebook's screen, a liquid-crystal display HDTV uses a fluid crystal



substance to form pixels of color in front of a backlight. LCDs may not be able to match plasma TVs' deep black and gray areas, but they're lighter, sometimes less fragile, and considered easier to set up. LCDs also are catching up to plasmas in size and price and are expected to supplant them in the market.

plasma—Plasma TVs use a tiny tube of gas for each pixel. Electricity makes each pixel glow. Plasmas are still available in bigger sizes than LCDs and create deeper blacks and sometimes brighter colors. However, older or less expensive models can also suffer permanent screen damage if an unchanging image is displayed too long, such as a TV channel's stock ticker or parts of certain video games.

progressive scan—A TV showing a progressively scanned image, as in 1080p or 720p resolutions, displays a full frame of video (both odd-lined and even-lined fields) all at once. Progressive-scan video

looks sharper and doesn't flicker like interlaced images can.

projection—Some large-screen HDTVs offer low-priced alternatives to LCD or plasma by using projection technologies. These technologies vary, but all projection TVs throw light on a screen from the front or rear. This means they are a little to a lot bulkier than plasmas or LCDs, but some rear-projection sets have stellar picture quality.




viewing angle—No matter where you sit in front of an HDTV with a wide viewing angle, such as 170 degrees, its picture should look reasonably good. Test this before you buy.

widescreen—A TV or monitor that's wider horizontally in relation to its vertical height—typically with a 16:9 aspect ratio for HDTVs—than an older 4:3 display.

BY MARTY SEMS




Which Type Of HDTV Is Right For You?






Plasma, LCD, and projection: These are the three main types of HDTVs from which you'll choose if you're in the market for a sleek, new set. Refer to our comparison chart below to see how the technologies stack up against each other.

What It Is	What It Means	Plasma	LCD	Microdisplay Rear Projection
Technology	Different types of HDTVs use different technologies; understanding each type can help make your decision easier	Plasma uses a network of cells, each filled with a gas mixture. When the gas is excited, it lights up, and the cells form the image on your HDTV.	Light is streamed through cells filled with a liquid crystal mixture. When charged, the intensity changes, forming the image on your HDTV.	There are three main types of rear-projection microdisplay: DLP, LCD, and LCoS. All use a lamp to bounce light off a chip onto the screen.
Size	The screen's diagonal size	Up to around 63 inches	Up to around 52 inches	Up to 65 inches and beyond
Depth	The depth of the set as a whole	4 to 5 inches deep	4 to 5 inches deep	From around 16 to 22 inches deep
Wall mountable	Can be mounted with a special bracket	Yes	Yes	No
Color reproduction	The brightness, saturation, and black level of an HDTV are some of the most important considerations	Excellent brightness, color saturation, and black levels	Exceptional brightness; very good color saturation; black-level quality is improving	Exceptional brightness and color saturation; generally excellent black levels
Ideal room type	Some types of HDTVs fit better in certain rooms than others	Media rooms with various seating areas	Rooms with windows or other ambient light	Larger rooms with a little extra floor space
Cost	HDTV prices range quite a bit depending on the technology	Expensive, though much less so than two years ago	Expensive, but generally less than plasma	Relatively inexpensive
Perfect for		TV fanatic who values picture quality above everything else	Gamers who also love HDTV	Big-screen lovers on a budget
Cooliest feature		Excellent response time for high action	In general, can also be used as a PC monitor	Exceptional value for size
				

Which LCD TV Is Right For You?




So you've decided to get an LCD TV. The next step is deciding *which* LCD TV to invest in. If you're like most people, you're probably looking at a set that's in the 40- to 46-inch range. If you do purchase one of these HDTVs, know that you should be able to sit 5 to 10.5 feet away from it to get the best picture. Refer to this chart for further help when shopping.






What It Is	What It Means	Samsung LN-T4053H	Samsung LN-T4661F	Samsung LN-T4665F
Size	The diagonal measurement of the TV's screen	40 inches	46 inches	46 inches
Dimensions (without stand)	Height x width x depth	26x39x4 inches	27.75x43.5x4 inches	27.25x46.25x4.5 inches
Weight (without stand)	How much the TV weighs	39.5 pounds	64.4 pounds	50 pounds
Native resolution	The image's sharpness is best when displayed at the native resolution; anything else must be converted	720p	1080p	1080p
Viewing angle	The maximum angle at which the viewer can see the screen clearly	178 degrees	178 degrees	178 degrees
Inputs	Inputs let you connect your components to your TV	3 HDMI; 2 component; 2 S-Video; 2 RF	3 HDMI; 2 component; 2 S-Video; 2 composite; 1 PC	3 HDMI; 2 component; 2 S-Video; 1 DVI; 1 PC
Outputs	Outputs let information from the TV, usually audio, be transferred to peripherals, such as speakers	2 audio	N/A	2 audio
Cooler feature		Game mode improves black levels, sharpens picture, and enhances sound	Fast response time minimizes blurring of moving video	Super Clear Panel technology that reduces glare without compromising clarity
MSRP		\$1,799.99	\$3,499.99	\$2,999.99
				
		8249709	8251447	8251508

	Sharp AQUOS LC-42D62U	Sharp AQUOS LC-46D82U	Sony BRAVIA KDL-40XBR2	Sony BRAVIA KDL-46XBR2	Sony Bravia KDL-46XBR3
	42 inches	46 inches	40 inches	46 inches	46 inches
	28x40.5x5 inches	29x44.75x5 inches	26x43.75x5 inches	29x49.75x4.75 inches	29x49.75x5 inches
	66.2 pounds	68.3 pounds	66.1 pounds	79.3 pounds	79.4 pounds
	1080p	1080p	1080p	1080p	1080p
	176 degrees	176 degrees	178 degrees	178 degrees	178 degrees
	2 HDMI; 2 compo- nent 1 S-Video;	3 HDMI; 2 compo- nent; 1 S-Video; 2 composite	3 HDMI; 2 compo- nent; 1 S-Video; 3 composite; 1 PC	3 HDMI; 2 component; 1 S-Video; 3 composite; 1 PC	3 HDMI; 2 compo- nent; 1 S-Video; 3 composite
	3 audio	N/A	2 audio	2 audio	2 audio
	OPC Function auto- matically adjusts brightness to fit room conditions	Backlight System enhances and widens the TV's color spectrum	BRAVIA PRO light en- gine processes all video signals for better detail and color	True HD resolution , the highest consu- mers can buy right now	True cinema-style picture with 1080p, Bravia light engine, and color enhancement
	\$2,299.99	\$3,199.99	\$2,799.99	\$2,199.99	\$3,899.99
					
	7992684	8251287	7941212	7941294	7997242

Which Plasma TV Is Right For You?




If you're planning on buying a plasma HDTV, it might be hard to decide on one just by looking at a wall of gorgeous sets. The most popular size of plasma TV is between 42 and 50 inches (and that's what we focus on below); as with most things in life, though, the bigger the better, so you'll find larger plasmas, as well. Refer to this chart for further help when shopping.






What It Is	What It Means	Insignia NS-42PDP	Panasonic TH-50PX75U	Panasonic TH-50PZ700U
Size	The diagonal measurement of the TV's screen	42 inches	50 inches	50 inches
Dimensions (without stand)	Height x width x depth	26.5x49x3.5 inches	31.25x47.5x3.75 inches	31.5x50x5.5 inches
Weight (without stand)	How much the TV weighs	90.4 pounds	83.75 pounds	105.8 pounds
Native resolution	The image's sharpness is best when displayed at the native resolution; anything else must be converted	720p	720p	1080p
Viewing angle	The maximum angle at which the viewer can see the screen clearly	N/A	170 degrees	170 degrees
Inputs	Inputs let you connect your components to your TV	1 HDMI; 3 component; 1 S-Video; 2 A/V; 1 PC	2 HDMI; 1 component; 1 S-Video	2 HDMI; 2 component; 3 S-Video;
Outputs	Outputs let information from the TV, usually audio, be transferred to peripherals, such as speakers	1 audio; 1 A/V	1 audio; 1 video; 1 A/V	2 audio; 1 composite video
Cooler feature		The price —excellent for a 42-inch plasma HDTV	Digital Cinema Reality technology for precise reproduction of movies	EZ-Sync technology lets you control all your HT components with one button
MSRP		\$1,199.99	\$2,299.99	\$3,499.95
		 7865465	 8254417	 8309056

	Pioneer Elite Pure-Vision PRO-1140HD	Pioneer Elite Pure-Vision PRO-FHD1	Pioneer PDP-4271HD	Pioneer PDP-5071HD	Samsung HP-T5054
	42 inches	50 inches	42 inches	50 inches	50 inches
	26.75x41x4.5 inches	29.5x50.5x3.5 inches	26.75x41x4.5 inches	31.25x48x3.75 inches	31x48.5x3.75 inches
	69.4 pounds	87.6 pounds	63.9 pounds	87.5 pounds	91.7 pounds
	720p	1080p	720p	720p	720p
	160 degrees	160 degrees	160 degrees	160 degrees	175 degrees
	2 HDMI; 3 component; 2 S-Video; 3 composite	2 HDMI; 2 component; 3 S-Video	2 HDMI; 3 component; 2 S-Video	2 HDMI; 3 component; 2 S-Video; 2 RF	3 HDMI; 2 component; 2 S-Video; 2 RF
	3 audio	2 audio	1 audio; 1 video	2 audio; 1 video	2 audio
	Home Media Gallery function lets you access movies, music, and photos through your home network	User-friendly picture adjustments: Standard, Dynamic, User, Night, Game, and Pure	CableCARD slot and TV Guide On-Screen	USB input and Home Gallery Photo Viewer, which let you show off your multimedia files to friends and family	Auto-pixel-shift technology that prevents picture burn-in
	\$4,500	\$8,000	\$1,999.99	\$2,399.99	\$2,999.99
					
	7955956	7867935	7854707	7854789	8254257

Which Microdisplay TV Is Best For You?

If you're in the market for a big HDTV, a rear-projection microdisplay model can give you a lot of bang for your buck. Here is a chart that compares eight 56- to 70-inch models, all available at Best Buy (www.bestbuy.com).

What It Is	What It Means	Mitsubishi WD-65732	Mitsubishi WD-65733	Samsung HL-S6187W
Projection technology	Depending on the manufacturer, the TV will have DLP, LCD, or LCoS microdisplay technology	DLP	DLP	DLP
Size	The diagonal measurement of the TV's screen	65 inches	65 inches	61 inches
Dimensions (without stand)	Height x width x depth	40.75x58.5x20 inches	39.5x58x15.75 inches	35.5x55.5x17.5 inches
Weight (without stand)	How much the TV weighs	99 pounds	78 pounds	81.7 pounds
Native resolution	The image's sharpness is best when displayed at the native resolution; anything else must be converted	1080p	1080p	1080p
Inputs	Inputs let you connect your components to your TV	2 HDMI; 3 component; 3 S-Video; 2 RF	3 HDMI; 3 component; 2 S-Video; 2 composite	2 HDMI; 2 component; 2 S-Video; 1 RF
Outputs	Outputs let information from the TV, usually audio, be transferred to peripherals, such as speakers	1 audio; 1 video	1 audio	1 audio
Cooler feature		6-color light engine for expanded colors and brighter images	Multiple color and light technologies for increased brightness and clarity	Cinema Smooth film mode eliminates artificial frames that are created when films are converted to DVDs
MSRP		\$2,499.98	\$2,799.95	\$2,599.99
		 8320168	 7963796	 7705897

	Samsung HL-T5676S	Samsung HLT6176S	Sony WEGA KDS-60A2020	Sony WEGA SXRD KDS-R70XBR2	Toshiba 65HM167
	DLP	DLP	LCoS (Sony's name for it is SXRD)	LCoS (Sony's name for it is SXRD)	DLP
	56 inches	61 inches	60 inches	70 inches	65 inches
	33.25x50.75x10.5 inches	36.75x55x12.25 inches	38.75x55.5x20 inches	46.25x68.75x24.5 inches	37x58x22 inches
	65.3 pounds	74.1 pounds	94.8 pounds	154.3 pounds	100 pounds
	1080p	1080p	1080p	1080p	1080p
	3 HDMI; 2 component; 2 S-Video; 2 RF; 1 PC; 2 composite	3 HDMI; 2 component; 1 S-Video; 2 composite; 1 PC	2 HDMI; 3 component; 1 S-Video; 3 composite	3 HDMI; 2 component; 1 S-Video; 3 composite; 2 RF	3 HDMI; 2 component; 1 S-Video; 2 A/V; 1 RF
	2 A/V; 1 video	2 A/V; 1 video	1 audio	2 audio	2 audio
	SRS TruSurround XT technology for an excellent audio experience	Brilliant Color II technology increases brightness and color intensity	Digital MPEG technology reduces ambient noise caused by compression	SXRD technology for excellent resolution, contrast ratio, response time, and production	Pixel Plus technology enhances every pixel for razor-sharp images and excellent detail and depth
	\$2,299.99	\$2,699.99	\$2,899.99	\$5,999.99	\$2,199.99
					
	8293839	8293777	8242109	8054758	8275706

Digital Camera Survival Kit

Be Prepared For Great Photography



Joby's Gorillapod
\$21.95 for compact camera size
\$39.95 for D-SLR size
www.joby.com

When setting out on your end-of-summer camping trip before school starts, packing an emergency survival kit in your trunk is almost a given. After all, who wants to risk being stranded in the great outdoors without a first-aid kit or a set of jumper cables? Being prepared is one of the most important parts of any endeavor, and shooting pictures is no different. Although today's cameras may be small enough to toss in your purse, often you need more than just your camera to capture those exceptional shots. Here we'll take a look at a few of the essentials you should pack into a digital camera survival kit.

Backup battery. Nothing could be worse than reaching the peak at the end of your

hike, only to realize that your camera's battery has run out of juice before you could capture the amazing view. To ensure that you'll have plenty of power, include a backup battery in your survival kit and make sure you keep it charged. If you're not sure what kind of battery your camera uses, point your Web browser to bestbuy.partfinder.com/batteryfinder and make use of Best Buy's Battery Finder utility—just enter your camera's make and model, and you're on your way to finding a compatible battery.

Additional memory. Battery power won't mean much if you don't have enough memory to hold all the pictures of the moose who decided to pay a surprise visit to your campsite, so invest in an extra memory card for your survival kit. For

most people, an extra card that is around 1GB is an excellent investment. Better yet, memory card prices have gone down in the past few years, so this extra peace of mind won't break the bank; for example, you can pick up Kingston's 1GB SD card (SD/1GBKR) for \$21.99 at Best Buy.

Camera care supplies. Smudges and fingerprints can get on even the most well-cared-for cameras, especially if you have kids. To prevent these messes from interfering with your pictures—fingerprints on a lens can make pictures fuzzy, for example, or worse, scratch the glass—make sure that your kit includes some cleaning supplies such as a soft, lint-free cloth and some lens cleaner. Consider picking up an all-in-one product such as Dynex's Digital Camera and Camcorder Cleaning Kit (\$3.99; www.dynexproducts.com), which includes cleaning solution, a cloth, a media card slot cleaner, and more.

Tripod or extra lens. You never know when you'll get the opportunity to capture a breathtaking sunset or to pose everyone for a family portrait. Be prepared with a small tripod and, if you're a D-SLR user, an extra lens. Joby's Gorillapod (\$21.95 for compact camera size, \$39.95 for D-SLR size; www.joby.com) is small, lightweight, and flexible enough to be wrapped around a tree branch. For D-SLR users, consider including a wide-angle lens in your kit; swap it out with your usual lens to catch a unique, wide view of the horizon or a mountain range. **FG**

BY LEAH HOUCHIN

The Need For Speed

How Shutter Speed Affects Your Digital Images

Whoever first said that speed isn't everything obviously wasn't a photographer. That's because one of the best things you can do to improve the quality of your digital photos is to master your camera's shutter-speed settings.

In the days of film cameras, shutter speed referred to the physical length of time that the camera's shutter stayed open to expose the film to light. Your digital camera probably doesn't have a physical shutter. Instead, shutter speed refers to the length of time your camera's sensor captures light data. Although the mechanism is different on a digital camera, the basic effect of shutter speed on photos is the same.

When you set the shutter speed, remember that the smaller the fraction, the faster the shutter speed. For instance, a shutter speed of 1/1250 (1/1,250 seconds) is faster than a shutter speed of 1/60.

With slower shutter speeds, such as 1/2 seconds, a camera captures image data for a greater length of time, exposing the camera's sensor to more light. Consequently, the image will be brighter than an image captured with a faster speed. Fast shutter speeds are ideal for bright conditions. If your photos are overexposed, try a faster shutter speed. For underexposed photos, try a slower shutter speed.

With a fast shutter speed, your camera captures image data quickly. Fast shutter speeds are not effective in low light because your camera's sensor doesn't get enough light to expose the image. Fast

shutter speeds are ideal in bright conditions and for fast-action scenes.

Master Of The Shutter

The exact method of changing a camera's shutter speed varies from camera to camera, so check your user's manual for assistance. Some cameras bury shutter-speed settings in an LCD menu, but most cameras provide access to shutter-speed settings through a mode dial on the top of the camera. If your camera's mode dial includes a full-manual mode (usually noted with an "M"), you can set the shutter speed here, as well as other camera settings.

Many point-and-shoot cameras do not have a full-manual mode, but most have a shutter-priority mode, which is usually noted as "Tv" on the mode dial. With shutter-priority mode, you tell the camera what shutter speed to use, and it automatically adjusts other settings to properly expose the image.

As you experiment with your camera's shutter speed in different lighting conditions and for different types of scenes, you will get a good feel for how the shutter speed affects your photos. With a little practice, in a relatively short time, you should see an improvement in the quality of your digital photos. **FG**

BY KYLEE DICKEY



In this photo, a fast shutter speed froze the action so that the volleyball player appears suspended in midair. With an even faster shutter speed, the volleyball would have appeared still, as well. Because the shutter speed was just a bit too slow, the volleyball is slightly blurred.

So, You Want To Buy A D-SLR?

What To Know Before You Shop



Canon Digital Rebel XTi
\$899.99; www.usa.canon.com

Prices for digital SLRs have plummeted to record lows and may dip even further. Just because the price is right, however, doesn't mean that making a decision about which model to buy will be easy. In fact, with competitive price tags—and competitive features—selecting the best D-SLR for your needs may be more difficult than ever before. We'll point out some of the most important issues to consider when preparing your budget and buying a D-SLR so you can make an informed decision.

First, if you already have SLR lenses that will work on one of the current digital

SLRs, you can save money by buying just a D-SLR camera body without a lens. If you don't have lenses available, you may want to buy a bundle that has both the camera body and a starter lens. If, for example, you know that you'll want a long, telephoto zoom lens for photographing sports, then you may want to forgo the kit lens and buy the body and a telephoto lens. You can always opt to buy more lenses as you recognize your needs and as your budget allows.

In addition to at least one lens, you'll need a media card or two, which you may already have from another camera. Make sure the card is compatible with your D-SLR and of sufficient capacity for

the amount of shooting you plan to do. For example, a 1GB CompactFlash card will hold approximately 203 high-resolution JPEG images from the Canon Digital Rebel XTi (\$899.99 with 18-55mm lens; \$799.99 body only; www.usa.canon.com); a 2GB card will hold about 415.

Some photographers prefer to use multiple, smaller-sized cards so they don't put all their digital "eggs" in one basket and risk losing all their images if they misplace a card or the card becomes corrupted and they can't access their pictures. Others would rather use a single, high-capacity card so they don't have to worry about changing cards or misplacing them. The choice is really up to you.

You may also need a camera bag that can accommodate the camera and your lenses and, if you plan to shoot a lot of low-light photography, you may want to pick up a tripod. D-SLR battery life is generally excellent. The Nikon D40x (\$799.99 with 18-55mm lens; \$729.95 body only; www.nikonusa.com), for instance, can capture about 520 images (half with flash) on a single charge.

Most D-SLRs use proprietary batteries that cost between \$40 and \$50, but unless you're planning an extended trip to shoot lots of photos, you probably won't need to buy a second battery. A few, such as the Pentax K100D (\$700; www.pentaximaging.com), use AA batteries, so you may want to invest in two sets of rechargeable NiMH (nickel metalhydride) AA batteries and a charger because they'll last much longer than AA alkalines, although you can use alkalines in a pinch. All but the most expensive D-SLRs have a built-in flash, so you may want to pick up an accessory flash if you plan to take indoor pictures since an external flash is more powerful (and provides broader coverage) than the on-camera flash.

Because all entry-level D-SLRs are PictBridge compatible, you can print directly from the camera to a PictBridge-enabled

printer. Most newer printers are PictBridge compatible, but if yours isn't, you may want to consider adding a compact or full-sized printer to your shopping list.

Key Features

Generally, entry-level D-SLRs have similar features, but look at shutter speeds. You'll need slow shutter speeds to shoot in low light while using a tripod. You'll want fast shutter speeds to capture action shots. And for a series of action shots, you'll need to know how many frames per second the camera can shoot and how many frames it can capture in one burst.

Outdoor photographers who plan to change lenses may want a camera with a self-cleaning sensor, which vibrates to get rid of dust particles that show up as small gray globs on your images. If low light without flash is your thing, find out how well the camera performs at high ISOs (light sensitivity). In low light, a high ISO lets you shoot at faster shutter speeds to avoid blurry images; however, increasing the camera's light sensitivity often results in image noise (grain). The only way to really check how the camera handles high ISO and image noise is to look at sample pictures—some camera review Web sites provide images at different ISO settings so you can check them out online. Another solution for low light/slow shutter speed conditions is optical (in the lens) or mechanical (when the sensor moves) image stabilization, which compensates for hand movements/shaking that can result in blurry images.

Image quality is subjective, of course, but before you buy a camera, take some sample shots to see how it performs in different conditions. Another reason to try the camera before buying it is to make sure you can handle it comfortably. Don't forget to check out the menu to make sure you can read and understand it clearly. **FG**

BY THEANO NIKITAS

A Few Of Our Favorite D-SLRs

Here are a few of our favorite D-SLRs and the features we like about them.

CANON DIGITAL REBEL XTⁱ

\$899.99 with 18-55mm lens; \$799.99 body only

www.usa.canon.com

This 10MP camera has a self-cleaning sensor that eliminates dust before it affects your images. The camera also uses a CMOS (Complementary Metal Oxide Semiconductor) sensor that keeps image noise levels low even at high ISOs. Action photographers can capture 27 images in a burst at about 3fps. This camera is perfect for photographers who want the versatility of shooting in low light and capturing outdoor action.

NIKON D40x

\$799.99 with 18-55mm lens; \$729.95 body only

www.nikonusa.com

This 10.2MP camera is lightweight and features in-camera editing to correct pictures that are too dark or have red-eye. The D40x can shoot up to 3fps for about 100 shots. However, autofocus will work only with new lenses, such as Nikon's AF-S and AF-I lenses. Unlike other Nikon D-SLRs, the D40x (and the D40) doesn't have an internal motor and relies on the lens' motor for autofocus. Other Nikon lenses will fit the camera, but you'll have to use manual focus. The D40x does a good job keeping image noise (grain) to a minimum when using high ISO (light sensitivity) settings, so this system is perfect for photographers who take pictures in low light and want to shoot outdoor action. Because you can make basic image corrections in camera, it's also a good choice for printing directly to a PictBridge-compatible printer.

OLYMPUS EVOLT E-500

\$799.99 with 14-45mm and 40-150mm lenses

www.olympusamerica.com

Bundled with two lenses that will satisfy almost every photographer's needs, the 8MP E-500 is an excellent value. Olympus was the first D-SLR manufacturer to incorporate a dust-reduction system that vibrates the sensor to remove dust particles. Dual card slots let you shoot with either SD or xD media cards—or both at the same time, which is an easy way to back up your images. The Evolt E-500 is perfect for the photographer who wants a value-added bundle and a complete package (camera and two lenses) right out of the box.

PENTAX K-100D

\$699.99 with 18-55mm lens

www.pentaximaging.com

What this 6MP camera lacks in pixel count compared to its competitors, it more than makes up for with its built-in "shake reduction," especially at this price. When your shaky hands move the camera, the CCD sensor moves, as well. This allows you to take pictures at slower-than-normal shutter speeds and still get a crisp, clear picture. The K-100D also offers a digital preview, which captures a temporary image and displays it on the LCD for up to a minute so you can check for accurate exposure, white balance, etc. This is perfect for the photographer who likes to shoot indoors and in low light without a flash because the in-camera image stabilization works quite well, as does its high ISO settings, so there will be lower-than-average image noise (grain).

Shoot Photos With Your Digital Camcorder

When Live Action Turns To Still Life



Sony DCR-HC48
Mini-DV Handycam
\$399.99
www.sonymstyle.com

Sometimes, when you're filming with your camcorder, a moment begs to be saved as a separate image, complete unto itself. But what if you don't have a camera with you? That shouldn't be a concern; practically all camcorders also shoot still images. And, regardless of manufacturer and model, camcorders operate pretty similarly when shooting stills.

What You Need

Unless your camcorder records to an internal hard drive, you'll need a memory card. The card fits into a slot usually located behind the flip-out LCD panel.

Most camcorders have slots for SD or MMC memory cards. You can often use

these cards interchangeably, as they're identical in size. With Sony camcorders, however, such as the DCR-HC48 Mini-DV Handycam (\$399.99; www.sonymstyle.com), you'll need to use some type of Sony's proprietary Memory Stick cards. Check your camcorder's documentation if you're not sure.

What Else To Look For

In your camcorder's menu, there may be a few basic settings for shooting still images. The most likely option is photo size. As well, because camcorders save images as JPEG files, you may be able to select a level of data compression, such as Normal, Fine, or Superfine. The less data compression you use, the better the photo quality will be, but the file size will be larger.

Camcorders usually have a single shutter button for shooting both movies and pictures. A mode dial determines which function is active. As you hold the camera, the shutter will be under your thumb, and the mode dial should be near your index finger.

Beware The Limitations

A camcorder's photo features may be convenient, but they're no full-time substitute for an actual camera. Here's why:

Size. One big appeal of point-and-shoot digital cameras is how small most of them have become. You can snap big, beautiful photos with a camera that slips into a shirt pocket. Try fitting the average camcorder there.

Resolution and quality. To shoot that big, beautiful photo, you need an image sensor with several megapixels to capture sufficient detail and clarity. Even budget-friendly cameras often have 6, 8, or even 10MP. In contrast, a typical camcorder has a 1- to 3MP resolution (although some do have slightly higher MP counts). And low-resolution files mean smaller prints—4x6, 3x5, and so on.

Also, a camcorder's lens and processing circuitry are optimized for moving imagery, not still photos. Even at an identical resolution, a camera's photos will almost certainly look better.

Creative control. We've yet to see a camcorder that didn't totally automate the process of shooting still photos. Digital cameras have shooting modes, and possibly manual options, for optimizing their performance for different conditions. Camcorders typically calculate the best exposure, and that's about it.

But that won't always matter. Sometimes convenience trumps quality, especially because memories matter most. **PG**

BY BRIAN HODGE

Perfect Beach-Bound Cameras

Shoot With The Fishes

In the past, many digital cameras remained safely ashore and case-bound on boating and diving expeditions because water and sand could ruin pricy new digital cameras. Today, however, you can buy “amphibious” cameras designed for use underwater, or you can buy protective housing that’ll pressure-proof and waterproof your camera to specified depths.

Cameras and waterproof cases are all different when it comes to their depth, length of immersion, and water temperature tolerances, so check the specifications before buying and double-check the users manual before going underwater.

Submersible cameras are less demanding than cases, but they don’t have the same depth tolerance. For dives to depths of 32.8 feet or less, for example, the Olympus Stylus 770 SW (\$379.99; www.olympusamerica.com) is a decent choice, and you can capture short video clips.

Some waterproof cameras require immediate care after shooting underwater. Sand and salt water are abrasive, so you’ll need to soak your 770 SW in fresh water for about 10 minutes after an ocean shoot. Power on the camera a few times to remove salt and sand from the lens. After soaking the camera, let it dry completely before using it again.

Waterproof cases can handle greater depths than submersible cameras, but

they’re designed for specific cameras. The best way to find out if a case fits a particular camera is to check the manufacturer’s Web site. For instance, we wanted to take some underwater shots with a Canon PowerShot A570 IS (\$279; www.usa.canon.com), so from the product page on Canon’s Web site, we clicked the Supplies & Accessories tab. The Canon Waterproof Case WP-DC12 (\$240), which is good to depths of 130

feet, is the recommended case to fully protect the A570 IS.

Testing One, Two, Three

Because you can’t typically try waterproof cameras or cases before you buy them, test them before you get to your destination. Test the case *before* putting your digital camera in it. Close the empty case and fully immerse it for several minutes to make sure the case doesn’t leak. You’ll have to hold it underwater; turn the case over and move it around underwater. If it leaks, dry it completely, make sure you’ve closed it properly, and try again. If it still leaks, you may have to exchange the case.

If you live near a pool or beach, jump in and take a few test photos to make sure you know which of the buttons on the case correspond to what settings and modes on your camera. You don’t want to fumble around trying to change settings when you’re 30 feet under and trying to capture fellow scuba divers or darting schools of fish.

Keep in mind, too, that the light will be different underwater than on land, and because the water is moving, experiment with shutter speeds or shooting modes to capture the right shot. **FG**

BY KATHRYN DOLAN



Digital Imaging Shopping Tips

A Digital Camcorder

BY PATRICK KEAN



ou may hope to buy a camcorder in anticipation of your baby's arrival, to preserve memories of your grandparents' 50th anniversary, or to create a project for your film class. Here are a few things to keep in mind as you shop.

How you plan to use your camcorder affects what you'll get and how much you'll spend. Family historians who record baptisms and anniversaries will like the small, portable, and easy-to-use miniDV camcorders, which start around \$250. Travelers who document journeys will appreciate the extended shooting times they'll get with hard drive-based camcorders. With a 30GB drive, you may be able to record seven hours in high-quality mode and 37 or more hours in low. For high-end enthusiasts, HD camcorders are the devices *du jour*. With many, you'll have manual control over focus, exposure, and shutter systems and access to special features such as infrared shooting and meters that display how many minutes of shooting the battery has left.

Speaking of batteries, most camcorder batteries last about an hour. Long-lasting batteries can be pricy, so you may want an extra, fully charged battery. As you shop, you'll probably want a case, too. Make sure it protects your camcorder and has room for extras, such as that spare battery and a memory card if your camcorder has card slots.

Memory cards are handy for taking still photos, and they're especially useful when you need to offload

video. Although all camcorders don't require a memory card for still photos, many do. If you intend to leave your digital camera at home, take along a roomy memory card. Most camcorders have available slots, and, as with digital cameras, different brands have different slots. Check the card slot on your camcorder before buying a memory card.

It's a good idea to try a camcorder before you buy it. Make sure it fits comfortably in your hands and that you can reach the controls. If your hands are too big or too small to access the controls, you may miss your daughter's ballet recital as you fumble for the power button.

To record the sounds, such as toasts to couples at their golden wedding anniversary party, as well as the sights, you may want a camcorder with a microphone jack so you can buy a separate mic. Built-in microphones on low-end camcorders capture ambient noise and have fairly limited ranges, so unless you're relatively close to your subject, you may be disappointed with the sound clarity. High-end camcorders frequently have front-mounted mics that record in Dolby Digital. If sound is important, make sure there's a high-quality mic included or a microphone jack so you can buy your own.

SHOPPING CHECKLIST

☐ What format best suits your shooting needs?

- ☐ MiniDV ☐ Digital 8
☐ Hard drive-based ☐ HD

☐ Do you want to include the cost of an extra battery?

- ☐ Yes ☐ No

☐ If the camcorder supports a memory card, what type?

- ☐ MMC
☐ SD
☐ SDHC (Secure Digital High Capacity)
☐ Memory Stick media

☐ Can you comfortably reach the controls and functions?

- ☐ Yes ☐ No

☐ How important is quality sound?

- ☐ The built-in mic will suffice.
☐ A microphone jack is the way to go.
☐ A high-quality, front-mounted mic is a must.

☐ Notes

CUT HERE

Digital Cameras

5 Must-Have Accessories

Digital cameras capture the memories of events large and small in our lives, and the list of possible accessories is nearly endless. Here are five, though, that we find indispensable.

1 Memory Cards

There is nothing worse than running out of room in your camera or memory card for more pictures—especially when you're at a family gathering that's united six generations of your relatives. Different digital cameras have different memory card slots, so make sure you know what kind of card your camera takes. If you don't know, visit the Memory



Cards & Sticks page on Best Buy's Web site and click the Memory Card Finder link. From there, you'll be prompted to select from drop-down lists your Device, the Manufacturer, and the Model, and a page of specs will pop up telling you not only what kind of media your camera takes, but also detailing the manufacturers and cards (and capacities) available for your camera.

2 Camera Case

You'll find bags and cases in all sizes and with all levels of protection. If you're driving across town to your niece's birthday party, you may want a bag that'll hold a few accessories, too. Make sure the

bag you want has pockets so you can tuck in a spare memory card, another lens, and extra batteries. As you tote your digital camera on a cycling or backpacking

trip, look for a sturdy bag with a good deal of padding. If you're planning to fly, you might also want a bag with a removable shoulder strap because you'll likely have to remove it when you check the bag. And when you finally take that photo trip snorkeling along the Molokini Crater and want to capture images of this underwater sanctuary, you'll need waterproof housing for the camera. Know that waterproof cases are designed for specific cameras; one size does not fit all.



3 Tripod

If you have loads of family pictures but you're not in any of them, it's time to get a tripod and join the group. The original Joby Gorillapod (\$21.95; www.joby.com) supports point-and-shoot digital cameras that weigh up to 9.7 ounces, and it has flexible legs with grips, so you can wind the legs around stair rails and other odd shapes if there's no flat surface available.



4 Photo Printer

The beauty of a digital camera and photo printer combo is that you print only those pictures you intend to keep. You don't have to print those spooky red-eyed photos of your cat or accidental pictures of your finger. With PictBridge-compatible printers, you don't even have to offload your pictures onto your computer before printing them, unless you want to edit them first.



5 Power Supply

Whether your camera takes AA batteries or rechargeables, make sure you have an adequate supply so you don't miss photo opportunities because of dead batteries.

If you have rechargeable batteries, make sure your camera case (or carry on) has enough room for your charger, too. When you're traveling overseas, check the power supply in the country you're visiting and make sure you have the necessary adapter for your charger, too, so you don't accidentally fry it. Tuck an extra set of AA batteries for your point-and-shoot camera, although you'd be hard pressed to find a destination too remote for a store that stocks AA batteries. **FG**



BY KATHRYN DOLAN

Digital Cameras

Top 5 Things To Know



Even though digital camera prices have dropped significantly in the last few years, buying your first—second, or even third—digital camera is still a big investment. These are the five most important things to keep in mind as you're shopping; they'll help you make the right decision when choosing a digital camera.

1 Print sizes.

How many megapixels does the camera have, or, more importantly, what is the largest size print that can be made from that camera? More megapixels doesn't necessarily mean you'll get better pictures, but a camera's megapixel count does affect how large you can print an image. If you don't plan on making large prints, then getting a camera with extra megapixels will be a waste of money and storage space (more megapixels mean larger file sizes, which will fill up your media card more quickly). To determine how many megapixels you need, figure out how large you want to print your images. The rule of thumb is to multiply the dimensions (in inches) of the print you'd like to make by either 300ppi (pixels per inch) or 200ppi. The ppi indicates the print resolution of the image, and either 300ppi or 200ppi will produce a good print. To make an 8x10 print at 200ppi, you'll need a file that measures 1,600 x 2,000 pixels or a 3.2MP camera (1,600 x 2,000 = 3,200,000). Using the same math, the ideal camera resolution for an 8x10 print at 300ppi is 7.2MP.

2 Optical zoom range.

What is the optical zoom range of the lens? Remember, pay attention to optical zoom range only; don't count the digital zoom, which does nothing more than crop the image to make it appear "closer" and may degrade image quality. A zoom goes from wide angle, which is good for landscapes, to telephoto, which is good for photographing distant subjects. Although most point-and-shoot cameras offer limited options in wide angle, there are many choices for telephoto. Choose a zoom that best fits your needs.

3 LCD size.

What is the size and resolution of the LCD? Although a 2-inch LCD is perfectly usable, most digital cameras are equipped with 2.5-inch or even 3-inch LCDs, which generally make it easier to compose a shot, read camera menus, and review images. On the downside, larger LCDs will drain batteries faster than smaller ones. Also check the resolution of the LCD; 115,000 pixels is usable, but generally, 235,000 is sharper.

4 Battery requirements.

There are two things to keep in mind when it comes to batteries: battery type and battery life. Many digicams use proprietary, rechargeable Li-Ion batteries and come with a charger, whereas

other cameras include one-time use AA batteries. While AA batteries are ubiquitous, alkaline and other non-rechargeable batteries will need to be discarded and replaced. A more economical—and environmentally sound—solution is to use NiMH rechargeable AA batteries and a charger. Your camera's battery life is generally rated according to CIPA (Camera & Imaging Products Association) standards, which will give you an average amount of photos you can shoot on one charge. Obviously, the higher the CIPA rating, the better. CIPA ratings can usually be found on manufacturer Web sites.

5 Media card.

What type of media card does the camera use? Most digital cameras—including sub-\$1,000 digital SLRs—use SD cards, which come in different capacities and speeds. The number of images you can fit on a card depends on the camera's megapixel count and the resolution or quality level you select when shooting. Determine the maximum number of images you want to put on the card; that will help decide what capacity card you need. Also, find out if the card is SDHC (Secure Digital High Capacity)-compatible and will work with high-capacity (4GB) SD cards. Only cameras with an SDHC designation (available on most manufacturers' Web sites) are capable of using a card with more than a 2GB capacity. **FC**

BY THEANO NIKITAS

Digital Imaging Glossary



Confused about what certain terms on that camera box mean? Use this glossary to help decode the world of digital photography.

aperture—An iris-like diaphragm opening that can expand and contract the lens opening to let you control the amount of light that passes through it, thus affecting the exposure. The term “f-stop” is used interchangeably with aperture.

burst mode—Where the camera can take several shots (up to 10) consecutively, usually in one second.

CCD—Charge-coupled device, which is the camera’s image-sensing component. It converts light into energy that can be stored as digital data on your camera.

depth of field—The area of a photo that is in focus.

digital zoom—Magnifying an image digitally by cropping it and filling in the rest with interpolated pixels, thus degrading the quality. Even though the numbers seem impressive, never choose a camera based on digital zoom.

f-stop—See aperture. Smaller f-stop numbers mean a wider lens opening; larger f-stop numbers mean a narrower lens opening.

ISO—For digital cameras, the ISO setting measures the sensitivity to light (similar to how it does with film). Digital camera ISO settings, such as 200, 400, etc., should capture photos as if one were using film with such a speed.

Lower ISO settings mean you need more light, and vice versa.

LCD—The screen on the back of the camera that lets you see a live-action view of your subject, your photo after you’ve taken it, or both.

lens—The apparatus on the front of the camera that gathers and directs light towards the imaging device. In a digital camera, the lens probably has both an optical zoom and digital zoom.

megapixel—Approximately 1 million pixels. The higher the megapixel count, the higher the resolution and the more you can crop, which means (in general) better-quality photos.

memory card—Because digital cameras have very little onboard memory, they need a flash memory card to store more than a dozen or so images. The type of memory card you need depends on your camera make and model. Some of the most popular memory cards are Secure Digital, MultiMediaCard, Compact Flash, and Sony Memory Sticks. In general, memory cards are quite small.

noise—The small statistical variations among pixels that lead to (usually) minor distortions of color in a photo.

optical zoom—The ability to move the lens physically closer to your subject. With optical zoom, the higher the number (such as 5X or 10X), the better. When choosing a camera, always consider the optical zoom, not the digital zoom.

resolution—The number of pixels in an image. The higher the resolution,



the more detail and quality in a photo. Resolution is measured in a proportion (such as 2,272 x 1,704).

shutter—A mechanism that opens and closes to allow light to pass through the lens. You can usually control the shutter’s speed.




shutter speed—The length of time a camera’s shutter is open to let light through the lens to hit the sensor, which records the image. This is expressed in fractions of a second: for instance, a shutter speed of 1/250 means that the shutter speed is 1/250th of a second.

viewfinder—The small opening in the camera that the user looks through to frame a shot. Some digital cameras don’t have a viewfinder; instead, use the LCD to frame the shot.

white balance—Light levels are adjusted electronically to ensure whites (and thus other colors) are pure, leading to more lifelike color. White balance can usually be manually adjusted, too.

Which Camera Is Best For You?

If you're a little confused about the most important features in a digital camera, you're not alone. In this chart, we compare features from select digital cameras available at Best Buy (www.bestbuy.com), and we also explain what these features mean. If that still has you cross-eyed, we recommend models for certain lifestyles.

		Compact		
What It Is	What It Means	Canon PowerShot SD850IS	Kodak EasyShare V803	Olympus FE-230
Resolution	In general, more pixels mean bigger, clearer prints	8MP	8MP	7.1MP
Optical zoom	Moves the lens physically closer to your subject	4X	3X	3X
Memory card	Removeable card that stores your photos in your camera	SD/SDHC/MMC	SD/MMC	xD-Picture Card
LCD size	The LCD is the display on the back of the camera	2.5 inches	2.5 inches	2.5 inches
Battery life	Based on how many shots you can take on a single charge	230 images	200 images	210 images
ISO	Light sensitivity; the higher the ISO, the greater the ability to take photos in low-light situations	Auto; High ISO Auto; Manual: 80, 100, 200, 400, 800, 1,600	Auto; Manual: 80, 100, 200, 400, 800, 1,600	Auto; Manual: 64, 100, 200, 400, 800, 1,250
Print sizes up to (at 240 ppi)		10x13 inches	10x13 inches	9x12 inches
Perfect for		Creative photographers who aren't quite ready for a D-SLR model	Anyone looking to invest in her first digital camera	Users who want a full-featured camera in a small, affordable package
MSRP		\$399.99	\$199.99	\$199.99
				
		N/A	8257502	8188374




D-SLR

	Panasonic Lumix DMC-TZ3K	Sony Cyber-shot DSC-T100	Canon Digital Rebel XTi	Nikon D40	Olympus Evolt E-510
	7.2MP	8.1MP	10.1MP	6.1MP	10MP
	10X	5X	EF-S 18-55mm f/3.5-22*	18-55mm f/3.5 - f/5.6 ED II AF-S DX Zoom-Nikkor lens*	2 Zuiko Digital zoom lenses
	MMC/SD/SDHC	Memory Stick Duo/PRO Duo	CompactFlash	SD/SDHC	CompactFlash/Micro-drive/xD Picture Card
	3 inches	3 inches	2.5 inches	2.5 inches	2.5 inches
	270 images	340 images	300 images	470 images	650 images
	Auto; Manual: 100, 200, 400, 800, 1,250, 3,200	Auto; Manual: 100, 200, 400, 800, 1,600, 3,200	Auto; Manual: 100, 200, 400, 800, 1,600	Auto; Manual: 200, 400, 800, 1,600	Auto; Manual: 80, 100, 200, 400, 800, 1,600
	9x12 inches	10x13 inches	10x16 inches	8x11 inches	10x16 inches
	Users who want a full-featured, yet affordable, digital camera	On-the-go camera enthusiasts with a keen sense of style	Confident camera users experienced with using D-SLRs	A newbie to the D-SLR arena	D-SLR users who want a good balance of auto and manual controls
	\$349.99	\$399.99	\$899.99	\$599.99	\$999.99
					
	8285651	8223362	7989901	8139169	7442109

*These two lenses are for D-SLR cameras, and thus, there's no established equivalent to optical zoom. Talk to your Best Buy Digital Imaging specialist for more information.

Which Digital Camcorder Is Right For You?




Digital camcorders come in a number of formats: DVD, hard drive, MiniDV, and high-definition are the most common. By comparing the following digital camcorders available at Best Buy (www.bestbuy.com), you can determine which format and product best fit your style.

What It Is	What It Means	DVD		DVD/HDD
		Sony 1.0MP Handy-cam DCR-DVD308	Canon DC220	Hitachi 30GB DZHS500A
LCD screen size	Diagonal length of viewing screen	2.7 inches	2.7 inches	2.7 inches
Optical zoom	The number of times the lens can enlarge or reduce the field of view; the better type of zoom	25X	35X	30X
Digital zoom	The number of times the camcorder can magnify a portion of an image; may result in loss of resolution	2,000X	1,000X	1,000X
Recording speeds	The type of speed and (if available) maximum amount of time that can be recorded in each	HQ: 20 min.; 35 min. SP: 30 min.; 55 min. LP: 60 min.; 110 min. (single; double)	XP: 20 min. SP: 30 min. LP: 60 min. (single layer)	XTRA: 6 hours FINE: 11 hours STD: 22 hours (to hard drive)
Memory card	Type of flash memory cards compatible with the camcorder (cards not included unless noted)	Memory Stick Duo	miniSD	SD
Digital still resolution	The number of megapixels the camcorder can capture in still images	1MP	6.8MP	3.3MP
Lines of resolution	Number of lines of horizontal resolution; the higher the number, the greater the detail	520	768	480
Weight	Weight of the camcorder (without battery, unless noted)	1 pound	14.2 ounces	1 pound
Perfect for		Novices who want to learn on a loaded camcorder	Home movie enthusiasts	Those who want to record in large blocks of time
Coolest feature		Shoot in 5.1-channel surround sound	On-board editing software lets you rearrange footage	No need for a separate PC to record video to as many DVDs as you want
MSRP		\$499.99	\$449.99	\$799.99
				
		8207745	8223308	N/A

	Hard Drive		MiniDV	MiniDV/HD	High-Def
	JVC 30GB GZ-MG555	Sony 30GB DCR-SR42	Canon ZR-850	Canon HV20	JVC HD Everio GZ-HD7
	2.7 inches	2.7 inches	2.7 inches	2.7 inches	2.7 inches
	10X	40X	35X	10X	10X
	1,000X	2,000X	1,000X	200X	200X
	Ultra: 7 hours FINE Norm Eco: 37.5 hours	HQ: 7 hours SP: 10 hours LP: 20 hours	SP: 80 min. LP: 120 min.	SP: 80 min. LP	HQ-VBR LT-VBR CBR
	SDHC/SD	Memory Stick Duo and Pro	SD/MMC	miniSD	SD
	5MP	3.4MP	1.07MP	3.1MP	2.1MP
	540	500	864	1,080	1,080
	14.4 ounces	13 ounces (with battery)	13.4 ounces	1.2 pounds	14.4 ounces
	Those wanting a lightweight, long- recording camera	Those who want to edit their movies on their PC	Those looking for an affordable, compact model	Home theater owners	Anyone who loves high def
	Auto Illumi-Light brightens your subject in low-light situations	Included Handycam Station enables one- click disc burning	Three zoom speeds that ensure steady zoom and pan shots	24p Cinema mode, so you can capture video with the same frame rate profes- sional filmmakers use	The ability to play back video in true high definition
	\$899.99	\$599.99	\$329	\$1,099	\$1,699
					
	8224968	8211534	8212249	8220061	8225066

Which Photo Printer Is Right For You?

If you print digital photos at home frequently, or would like to, then a dedicated photo printer may be a better option than an all-in-one. Photo printers at Best Buy (www.bestbuy.com) offer a variety of features in a wide range of prices.

What It Is	What It Means	Epson PictureMate Snap	Epson High-Definition R260	Epson Stylus R800
Photo print speed	How fast it can print one image	45 seconds (4x6)	13 seconds (4x6)	45 seconds (5x7)
Resolution	Dots per inch (or dpi)—the more, the better	5,760 x 720	5,760 x 1,440	5,760 x 1,440
Ink cartridges	How many cartridges the printer uses	1	6	8
Paper sizes	Sizes of paper compatible with the printer	4x6	8.5x11.5, 8.5x14, A4, B5, A5, A6, half letter, executive, custom sizes	Letter, legal A4, statement, executive, custom, 4x6, 5x7, 8x10, panoramic, and more
PC-free printing	The ability to print images directly from camera	Yes	Yes	No
Memory card	Type of memory card the computer can accept and recognize	CompactFlash, SD, SDHC miniSD, MMC, Memory Stick, and more	No	No
Wireless connectivity	The ability to communicate with other peripherals with no wires	Yes, with optional Bluetooth print adapter	No	No
Dimensions	Height x width x depth	5.7x8.5x6 inches	11.1x17.7x21 inches	7.8x19.5x12.1 inches
Perfect for		On-the-go photographers	Scrapbookers	High-gloss prints
Coollest feature		Can operate on rechargeable battery (not included)	Produces border-free images in four print sizes/prints on CDs and DVDs	Included holder for printing on paper rolls
MSRP		\$149.99	\$99.99	\$399
		 7955359	 7954387	 6389561

	Canon Selphy Compact Photo Printer DS810	Canon PIXMA Photo Printer iP6700D	Canon PIXMA Photo Printer Pro9000	HP Photosmart Portable Photo Printer A617	Kodak EasyShare 5300 All-In-One
	63 seconds (4x6)	47 seconds (4x6)	30 seconds (4x6)	39 seconds (4x6)	28 seconds (4x6)
	4,800 x 1,200	9,600 x 2,400	4,800 x 2,400	4,800 x 1,200	4,800 x 1,200
	1	6	8	1	2
	4x6, credit card, photo stickers	Letter, legal, credit card, 4x6, 4x8, 5x7, 8x10, #10 envelopes	Letter, legal, 4x6, 4x8, 5x7, 8x10, 13x19, #10 envelopes	4x6, 4x6.5, 4x8, 5x7, 4x12	A, A4, 3x5, 4x6, 4x8, 4x12, 5x7, 6x9, 8x10, 11x14
	Yes	Yes	Yes	Yes	Yes
	CompactFlash, SmartMedia, Microdrive, MMC plus Memory Stick Duo and PRO Duo, miniSD, and xD-Picture Card with optional adapter	CompactFlash, SD, MMC, Memory Stick/PRO, SmartMedia, Microdrive, plus others (some with optional adapter)	No	CompactFlash, SD, MMC, Memory Stick/Duo, xD-Picture Card, plus miniSD with optional adapter	CompactFlash, SD, MMC, Memory Stick, Memory Stick Pro, xD-Picture Card, Microdrive
	Yes, with optional Bluetooth print adapter	Yes, with optional Bluetooth print adapter	No	Yes, with optional Bluetooth print adapter	Yes
	3.9x8.7x8.7 inches	7.3x16.9x12 inches	7.6x26x14 inches	5.1x9.9x4.6 inches	8.8x18.8x14.7 inches
	Those wanting a low-cost printer	Those wanting high-res photos	Serious photographers	Those wanting quick fixes for image problems	A home office user on a budget
	Compact size	Two-sided printing	Supports wide variety of paper types, including fine art	HP Photo Fix button for automatic corrections	Photo prints cost around 10 cents with Kodak Value Pack (not included)
	\$149.99	\$179.99	\$499.99	\$129.99	\$199.99
					
	7330738	7919407	8030631	7893862	8250304



Belkin's F5D8231-4 N1 Wireless Router
\$149.99 • www.belkin.com

Share & Share Alike

An Introduction To Home Networking

Your husband used his PC to download a couple of movie trailers he'd like you to see, but you'd rather watch them on your own laptop. For his part, he'd like to hear a few of the podcasts and songs in your iTunes library, but he prefers to listen to them over his computer's speakers.

Meanwhile, your precocious teen is building a home-theater computer to record television shows—and he says it's going to live in the living room. Furthermore, he says he'll be able to send the TV shows the family likes to dad's computer so he can record them to DVD.

A decade ago, many of our homes had just one computer, if any. Being "connected" typically meant a pricey modem connection to the World Wide Web.

Today, of course, we take Internet access as a given. And we tend to have



multiple computers, each with its own set of digital photos, personal documents, and music files.

In a situation like this, you'd like everyone (and every computer) to share. First and foremost, you want all of your PCs to be able to share a single Internet connection.

And while you're at it, you'd like to set up your household's computers so that they can share files with each other. This means that when you're looking for a particular photo, you'll be able to search every PC in the house at once. And instead of copying a file to a USB

thumb drive and walking it over to another computer, you'll be able to send the file instantaneously.

The answer, of course, is home networking. Put simply, it means connecting all of your computers to a device that lets them communicate with each other and share an Internet line.

In the vast majority of cases, people network their computers by linking them to a router or switch, which usually looks like a book-sized plastic or metal box. However, there's more than one way to make this connection.

Wireless. For most homes and many businesses, a Wi-Fi (also called 802.11g/b/draft-n) network is the way to go. There are no cables to trip over, and you can move your computers virtually anywhere within the range of the equipment you buy. You may need to experiment with antenna locations to get the best network speeds.

You'll need a router with wireless capability, such as Belkin's F5D8231-4 N1 Wireless Router (\$149.99; www.belkin.com). You'll also need to buy each computer a compatible wireless network adapter, such as Belkin's F5D8001 N1 Wireless Desktop Card (\$119.99). Note that a few computers and many laptops already have built-in wireless adapters.

Wired. It's simpler to set up a wired network than a wireless one, although you do have to buy cables and possibly hide them under the baseboards or run them through the walls. One example of a wired router is the Linksys BEFSX41 EtherFast Cable/DSL Firewall Router with 4-Port Switch/VPN Endpoint (\$79.99; www.linksys.com).

Many computers have built-in Ethernet adapters (also called LAN [local-area network] ports or NICs [network interface cards]), but you can buy an adapter such as D-Link's DFE-530TX+ 10/100 Fast Ethernet Desktop Adapter (\$11.99; www.dlink.com) if need be.

Power line. With special adapters, you actually can network your computers using the existing power outlet wiring in your walls. For instance, D-Link's DHP-301 PowerLine HD Ethernet Starter Kit (\$189.99; www.dlink.com) can send data over the same wiring that carries AC power to your computers.

To learn more about home networking, read on. We've got a lot of good information for you. **FE**

BY MARTY SEMS

Q&A

Home Networking

Home networks have expanded beyond their traditional roles of letting computers share files. Now they let all of your PCs and Internet-enabled devices share a high-speed

Internet connection, and they deliver high-quality audio and video from a central location to devices along the network. A multitude of hardware and myriad wired/wireless standards make it

tough to know what to look for when shopping, so keep this info in mind. **FG**

BY TRACY BAKER

QUESTION

What hardware do I need?

THE BOTTOM LINE

You'll need a router at minimum, and everything else varies depending on the type of network you're trying to create.

ANSWER

Routers (also called gateways or access points), such as the Linksys WRT300N Wireless-N Wireless Router with 4-Port Switch (\$149.99; www.linksys.com), serve as the centerpiece of a home network, routing data from device to device and letting all networked devices share a single Internet connection. Beyond that, each device that connects to the Internet needs either a wireless or wired network adapter. You also need Ethernet cable for all wired network devices, including the modem that came with your broadband Internet account.

QUESTION

Should I create a wired network or a wireless network?

THE BOTTOM LINE

Wired is best for transferring large files at high speeds, but wireless is the best choice for the convenience factor.

ANSWER

Wired networks are incredibly stable and handle large files well, making them great for streaming high-definition video across a network, but the convenience of wireless is hard to top. Imagine checking your email from your hammock, playing console games online from your living room, or checking recipes online right in the kitchen using a Palm TX, all without having to string wires all over the house. Wireless networks let you do all that and more, and nearly all wireless routers come with wired Ethernet ports so you can combine the two types of networks and enjoy the best of both worlds.

QUESTION

What wireless standard is the best for home users?

THE BOTTOM LINE

Go with 802.11g for compatibility, 802.11a if you have interference issues, and 802.11n for maximum multimedia performance.

ANSWER

802.11g and 802.11a networking hardware use different radio frequencies but support similar speeds and are good for transferring DVD-quality video across a home network. 802.11g is compatible with the largest number of products but is the most susceptible to interference. 802.11a is not prone to interference but doesn't work with as many wireless products. Upcoming 802.11n draft 2.0 (also called Wireless N) products are much faster than any previous standard and should eventually become the standard of choice for home networks.

QUESTION

What is Ethernet, and what do the different cable labels mean (CAT-5, CAT-6, etc.)?

THE BOTTOM LINE

Look for cables labeled CAT-5e or better for maximum signal quality and compatibility in your Ethernet network.

ANSWER

Ethernet is a type of wired network technology that is commonly used for home networks. CAT-5 cables use an older standard that is unsuitable for the faster Gigabit Ethernet connections used by today's wired network products. CAT-5e (the "e" stands for "enhanced") is backward-compatible with CAT-5 and is suitable for high-speed Gigabit Ethernet products. CAT-6 is the latest standard and supports more than double the speed of CAT-5e.

QUESTION

Why are some wireless hardware products labeled "pre-N," "draft-N," or something similar? Don't they all use Wireless-N technology?

THE BOTTOM LINE

Pre-N products are faster than 802.11g or 802.11a devices, but you'll need to buy all of the hardware from the same manufacturer to enjoy 802.11n file transfer speeds.

ANSWER

802.11n (also called Wireless-N) is so fast compared to previous wireless standards that companies are eager to release products that use it, but there's a snag: An official 802.11n standard hasn't been ratified yet and likely won't be until late 2008 or early 2009. In the meantime the hardware manufacturers have used the existing non-ratified specifications to cook up their own versions of 802.11n for release right now. The upside for customers is that they can enjoy the speed, range, and reliability enhancements 802.11n offers today. The only catch is that you should buy pre-N products from the same manufacturer to make sure they will all work together at maximum speed.

QUESTION

Do I need anything special to share an Internet connection?

ANSWER

Just a router. Connect the cable from your broadband Internet modem directly to the WAN (wide-area network) port on the back of your router, and any computer or other device that connects to the network can use the Internet connection.

THE BOTTOM LINE

The router takes care of everything needed to share an Internet connection.

QUESTION

Do I need special hardware to wirelessly connect my Nintendo Wii, Sony PlayStation 3, or Microsoft Xbox 360 to the Internet?

ANSWER

The Wii and the 60GB version of the PS3 have wireless networking hardware integrated directly into the machines. The Xbox 360 and the 20GB version of the PS3 require adding a wireless bridge to the mix to get online if you don't want to hassle with wires.

THE BOTTOM LINE

You're OK if you have a Wii or the 60GB PS3, but the other consoles need extra hardware.

QUESTION

If I have network hardware that operates at different speeds, will it all work together?

THE BOTTOM LINE

Everything will work, albeit at the lowest common speed.

ANSWER

No matter what speeds your router and other hardware support, the devices will all work together as long as they are all Ethernet or wireless Ethernet (Wi-Fi) products. The only limitation is that two devices communicating with one another will transfer data at the speed supported by the slowest device.

QUESTION

I keep hearing about streamed multimedia. What is streaming, and do I need anything special to use it?

ANSWER

When you launch a saved video on your computer or play a DVD on your TV, that video is stored on a hard drive or DVD and played from there. Streaming lets you play a video that is stored somewhere else on the network (or on the Internet) on a playback device such as the Xbox 360 or another computer using software like Windows Media Player without having to store the video on the machine that is playing it. You need a network connection that's fast enough to support streaming, with fast speeds allowing for high-quality audio and video.

THE BOTTOM LINE

Streaming lets you view and listen to multimedia anywhere your network reaches.

QUESTION

What is the difference between a wireless NIC (network interface card) and a wireless bridge?

ANSWER

A wireless NIC requires that the device it's connected to or installed in, such as a laptop computer or video game console, specifically support the NIC via special drivers. Bridges have extra hardware that lets them work with any network-ready device, although this convenience will cost you a bit more. A NIC will cost between \$10 and \$20, and a bridge, such as the Netgear Wall-Plugged Ethernet Bridge (\$99.99; www.netgear.com), will set you back about \$100.

THE BOTTOM LINE

NICs can save you money but, when in doubt, get a bridge because they are compatible with everything.

Remote Control

Set Up A Simple Home Monitoring System



D-Link Securicam Network
DCS-950G Wireless Internet Camera
\$219.99 • www.dlink.com

A neighborhood watch system may deter break-ins, theft, and vandalism, but neighbors can't see what's going on inside your home.

A network with a security camera can. It helps monitor your home no matter where you are. Need to keep an eye on an elderly parent or your teens after school? No matter what your safety concerns are, with one or more of these cameras, you can create a home monitoring system to give you peace of mind when you're away.

Setting up a monitoring system doesn't require an elaborate home network (see "Other Essentials & Accessories" sidebar). You'll need a broadband Internet connection and a router, such as the Linksys SpeedBooster Wireless-G Broadband Router (\$89.99; www.linksys.com).

Two things to look for in a security camera are ease of setup and ease of use.

The D-Link Securicam Network DCS-950G Wireless Internet Camera (\$219.99; www.dlink.com) and the Panasonic BL-C30A Wireless 802.11b/g Network Camera (\$299.95; www2.panasonic.com) deliver on both counts. They're plug-and-play, provide the software you may need to keep a remote eye on your home, and send email alerts if they detect motion.

The D-Link Securicam, built on the 802.11b/g wireless standard, records still images, video at 30fps, and audio to your computer. You can also set the camera to record to a storage unit, such as the Western Digital My Book World Edition 500GB Remote Access Storage System (\$279.99; www.wdc.com), on your home network. Another neat feature is the ability to set the camera manually or run scheduled or motion-triggered recordings. You can include four DSC-950G cameras in your security setup and watch views from all four simultaneously.

To view the images remotely, sign up for a dynamic DNS (domain name server) service such as DynDNS (free; www.dyn dns.com). This service lets you assign an easy-to-recall dynamic IP address to your computer so you can view the images anywhere you can get Internet access.

Cell Phone Access

One great feature of the BL-C30A is that you don't need a computer at the remote site where you set up the camera, but you'll need high-speed Internet access and a router. When you buy this camera, you set up a free account at the Viewnetcam Web site (www.viewnetcam2.com). You can record video images (between 7.5 and 15fps, depending on your ISP's uplink speed) to your personal site within the Viewnetcam domain or to a home PC or notebook if you prefer.

You also can see the video footage and pictures through a Web-enabled cell phone. In fact, you can move the BL-C30A—it pans 120 degrees left and right and 90 degrees up and down—using the buttons on your phone. The camera doesn't provide audio, so you won't hear what's going on at the remote location, but the BL-C30A works with 11 other cameras, and you can see all 12 camera views on the same screen at once.

With these components, you can keep an eye on your home no matter where you roam. **FG**

BY RACHEL DEROWITSCH

Other Essentials & Accessories

Here's a checklist of essentials and optional accessories to add to your home monitoring system.

Essentials

- Broadband Internet connection
- Router
- Camera

Accessories

- Networked storage device
- Network adapters
- Additional cameras

What's Your Type?

Select The Right Network

Home networking has never been easier or more affordable, but that doesn't mean you should take a one-size-fits-all approach when setting up your own

home- or small-office network. A network for your home-based business requires different equipment and different considerations than a network intended to share music and video

around the house. We'll help you match the way you live to the network you need. **FC**

BY GREGORY ANDERSON

Multimedia Maven

Your plans: You love digital music and movies, download like a pro, and want to share media from room to room. You won't sacrifice a lot of space, however, or clutter up your living areas with wires and clunky boxes. Media must be available quickly and simply, without spending hours tweaking settings or converting files.



You'll need: Entertainment-focused networks require compact and highly-compatible wireless equipment powerful enough to handle high-bandwidth media in large quantities. Rather than connecting a Media Center PC directly to your television, let your computer stay by the desk and send media wirelessly.

Look for: Combine Apple's AirPort Extreme (\$179; www.apple.com) and an Apple TV (\$299) media extender with iTunes (free). The Apple TV streams iTunes-compatible music, TV shows, movies, pictures, and podcasts from your computer to your widescreen HDTV. Apple TV works with other draft-n equipment, plus all 802.11b/g routers, but AirPort compatibility at 802.11 draft-n's higher speeds is automatic and guaranteed. AirPort's USB connection makes adding a shared printer or network drive as easy as plugging one in. Your computers can connect to the AirPort via Ethernet cables or with their own wireless networking cards.

Just The Basics

Your plans: You have a couple computers but don't want to build your life around technology. You don't mind keeping the machines in the den or office, but you want to share printers, folders, and an Internet connection. Minimalism and easy maintenance are your main priorities.

You'll need: Wired Ethernet doesn't get the same publicity as wireless, but it's networking's no-hassle workhorse. If you're keeping everything close together, wiring won't pose much of a problem, and wired networks combine affordability, simplicity, reliability, and speed.

Look for: Your ISP's DSL or cable modem might include router functionality and several Ethernet ports; if not, look for



broadband routers that include both. The Linksys EtherFast 4-Port Cable/DSL Router (\$59.99; www.linksys.com) connect to your cable or DSL provider and serve as a network switch for up to four Ethernet connections. If your computer doesn't have a built-in network adapter, you may need to add a D-Link

PCI Fast Ethernet Network Card (\$11.99; www.dlink.com). If your router has extra ports available, make file and printer sharing easy with network-enabled peripherals, such as the Western Digital My Book 500GB Remote Access Storage System (\$279.99; www.wdc.com) or the HP Deskjet 6940 (\$129.99; www.hp.com).



Power Play

Your plans: You have a large area to cover, lots of information to share, and an insatiable appetite for streaming media, online collaboration, and other high-bandwidth activities. You need a powerful network that can support a substantial and rotating cast of machines and other gadgets. Price and simplicity are secondary to power and flexibility.



You'll need: You can't beat Gigabit Ethernet for power and capacity, so you'll want a wired portion of the network for data-intensive connections and heavy-duty storage and backups. A high-speed wireless router with plenty of security features will round

out the network and provide flexibility. Security and backup devices will also be important tools for keeping the system running smoothly.

Look for: The Linksys EG008W Gigabit 8 Port Workgroup Switch (\$94.99) should provide all the connections you need, managing the line from your ISP plus up to eight other computers or devices.

One of those connections should go to a wireless access point, such as the Linksys WAP4400N (\$99), which can work with any of the wireless 802.11 standards (b, g, or draft-n) and includes signal encryption security options. When storing large quantities of important information, it's advisable to schedule regular backups. The Western Digital My Book World Edition II 1TB storage system (\$449.99), using that Gigabit Ethernet connection, of course, should be able to handle even the largest loads. If you need to access your network remotely (and securely), consider a VPN router such as the Netgear FVS114 (\$79.99; www.netgear.com), which helps set up secure connections to your home or office network from anywhere in the world.

Striking A Balance

Your plans: Your life balances work and play. Your network needs to reflect that balance without going overboard in either direction. You appreciate wireless' flexibility and portability, but you don't need cutting-edge performance. Sharing music or image files among several computers is nice, but you're not looking to replace your trusty cable box and CD player.

You'll need: Simple all-in-one networking devices combine several basic functions to meet the needs of most users.

Look for: If you have an Internet connection and network-ready computer (802.11b/g or wired Ethernet), complete the equation with a wireless router, such as the D-Link WBR-1310 (\$39.99). It serves as a

broadband router, wired Ethernet switch, and wireless access point in one affordable package. A built-in firewall and wireless encryption

help keep your network secure, and the wireless/wired options let you connect computers of all shapes and sizes.



Leave It To The PC Pros

Best Buy's Can Get It Done

Today's computers can handle your entertainment, financial, shopping, communication, and business needs like never before. But from the moment you power on your new PC, you'll have to fight spyware, viruses, and online predators; troubleshoot and repair error messages; configure new and old hardware and software; and regularly install updates and patches. Aren't computers great?

Send In The Geeks

Like g-men with pocket protectors, the agents of Best Buy's Geek Squad (www.bestbuy.com/geeksquad) are there to handle all of your PC setup, repair, and installation needs.

New PC setup and security. The Geek Squad agents can streamline your system with over 100 in-depth tweaks, install and configure security software and other software updates, get rid of unnecessary software that comes preloaded on

your computer, create a restore CD, and even offer secure online storage.


Repairs and upgrades. Best Buy's team can also unfreeze locked systems, recover data from crashes, and improve poor performance. The Geek Squad's basic service fixes software, removes viruses and spyware, and cleans your PC. You can upgrade to get security and privacy software installed and configured, and you can hire the Geek Squad to upgrade your operating system.

Wireless networking. If you want to communicate more efficiently among multiple computers, the Geek Squad can help you accomplish that, as well as with setting up a PC network in your home; connecting two network-capable devices (such as gaming consoles,

desktop and laptop computers, print servers, and more); and even with securing your wireless network.

Data protection. If you have data you just can't lose (and we all do), the Geek Squad offers both a one-time backup service and an automated backup service. The squad can clean and remove sensitive files from a hard drive you're planning to sell or discard.

Who You Gonna Call?

Once you've made the decision to buy a new PC, you aren't on your own to keep it working. Just call your friendly local Geek. 

BY ANDREW LEIBMAN

Available Services

If it involves your computer, Best Buy's Geek Squad can help. Here's a list of the computer services your local Geek Squad agents can sort out. And they even make house calls.

- Set up and secure your computer
- Perform repairs and upgrades
- Protect and save your data
- A la carte services

Price Breakdown

To get your PC in tip-top shape, Best Buy's Geek Squad offers a range of services that are guaranteed to help you get the most out of your computer.

- Standard Security and Performance Package: \$129 (in-store); \$229 (in-home)
- Advanced Security and Performance: \$149 (in-store); \$249 (in-home)
- Premium Security and Performance: \$199 (in-store); \$299 (in-home)
- Advanced Diagnostic and Repair: \$199 (in-store); \$249 (in-home)
- Advanced Diagnostic, Repair, and Prevention: \$299 (in-store); \$349 (in-home)
- Operating System Upgrade (software not included): \$129 (in-store); \$249 (in-home)
- Network Installation (two devices or computers): \$159 (in-home)
- Single PC Networking Installation: \$89 (in-home)
- Wireless Security Setup: \$59 (in-home); \$49 (remote)
- One-Time Data Backup/Transfer: \$99 (in-store); \$229 (in-home)
- Automated Data Backup: \$129 (in-store); \$249 (in-home)
- Clean and Remove: \$59 (in-store)

Wired vs. Wireless Networks

Which Is Best For You?

Setting up and managing networks used to be just for the system admins at your office, but more and more people are now networking their own computers at home. Here are some pros and cons of wired and wireless networks to help you decide which option is best for you.

BY JENNIE SCHLUETER

Wired

Pros

- Even though any discussion of network speed usually involves theoretical instead of actual speed ratings, wired networks are faster than wireless networks. The speed difference is really only something gamers, graphic designers, and others working primarily with large files will notice, though.
- Most wired networks are more reliable than wireless networks because they're not as vulnerable to interference and fluctuations in the connection bandwidth.
- Wired networks have always been considered the more secure of the two network types, even though encryption technology has made wireless networks more secure than they used to be.

Cons

- The biggest downside of having a wired network is the most obvious: lack of mobility. When all of your computers are connected by cables to each other, you don't have the freedom to surf the Web or finish a bit of work wherever you want.
- Unless your home is prewired with Ethernet cables, running the necessary cables to connect computers in different rooms in your home is difficult and expensive. The process also requires a certain level of network know-how.
- If you haven't drilled holes to run and conceal your network cables, they're likely loose in the house. This means a mess of unsightly cables that may even pose a safety hazard.

Wired Is Best For:

- Avid gamers
- Graphic designers
- Anyone with large upload or download needs
- A home office where all networked PCs are in the same room



Wireless

Pros

- The ability to work or play on the computer from anywhere in the house (within range, of course) without the hassle of cords and cables is a huge plus.
- Setting up a wireless network means you don't need to figure out how to run a cable from the computer in your home office to your teenager's computer in his room upstairs.
- Most computers sold within the past few years have the necessary wireless network adapter built in, so all you need to set up your network is a wireless router, such as the D-Link Xtreme N Wireless Gigabit Router (DIR-655 \$179.99; www.dlink.com), which is appealing to network newbies because of its ease-of-use.

Cons

- Because of signal problems and variances in bandwidth, wireless networks are not as reliable as wired networks, which usually only drop a connection if a cable is loose.
- Unless you use a firewall and encryption technology, your wireless network is unsecured and vulnerable to outsiders.
- Wireless networks cannot attain the same speeds as wired networks, which can be an issue for anyone working with large files.

Wireless Is Best For:

- Notebook users
- Users with limited network know-how
- Casual users with basic needs

Movin' On Up

Take Your Home Network To The Next Level

It takes longer to happen for some than others, but everyone experiences the feeling eventually. At some point, a new toy loses its “wow” factor, and you begin looking for the next big thing. You may have already experienced this with your home network. When you first set it up, you were thrilled to be able to surf the Internet from the porch and access a file saved on your desktop PC from your notebook in the kitchen. But now you’re wondering what more your network can do for you.

The answer is quite a lot. There are many products that range from simple, low-cost additions to your existing setup to complex, expensive overhauls of the entire network. We’ll take a look at some of the options.

HDTV On Your PC

One great way to take advantage of the digital content on the Internet is to turn your PC into a DVR. With a Media Center PC or other DVR software and a TV tuner card, you can record live TV on your computer, but you won’t have to watch it at your computer. You can add an Xbox 360 (\$399; www.xbox.com) and a wireless Xbox Live-compatible router to your wireless network so that you can view the content on the TV.

Stream Music

Are you tired of trying to figure out how to enjoy the extensive music collection you’ve amassed on your computer

without sitting at your computer? Sure, you can download the files to your MP3 player, but wouldn’t it be nice to enjoy all that music on your PC anywhere in your home? The NETGEAR Digital Entertainer Wireless Multimedia Player (model EVA 700-100N, \$251.99; www.netgear.com) lets you stream music from your PC to your TV, stereo, or home entertainment system. The Digital Entertainer works with both wired and wireless networks and also lets you view digital photos and video on your TV.

Add Home Automation

If you want the ultimate in home networking, check out products that let you add control of home automation tasks such as lighting and security. The Lifeware software from Exceptional Innovation (\$15,000; www.exceptionalinnovation.com) is a complete package that includes most of the parts, setup, and labor and a professional who’ll show you how to run it. Lifeware works

with a Media Center PC to control a complete home network, including wired components, such as your TV and stereo; wireless components, such as your notebook; and home control devices, such as the thermostat and light switches.

Consumers can see a home demonstration of the company’s offerings in the demo rooms of Magnolia, Best Buy’s high-tech home theater division. While impressive, products in this category are still rather expensive. The Lifemedia server (starting at \$4,500) is a Media Center PC bundled with Vista Ultimate, Lifeware, and from 500GB to 4.5TB of storage. Then you’ll need to replace the home devices you want to control, such as your regular light switches, with special switches equipped with radio chip technology so they can communicate with your network. **FG**

BY JENNIE SCHLUETER



NETGEAR Digital Entertainer
Wireless Multimedia Player (model EVA 700-100N)
\$251.99 • www.netgear.com

Computer Shopping Tips

Buying A Wireless Router

It seems that everyone is setting up her own wireless network these days. Because many computers are sold with network adapters built in, all you really need is a wireless router to get your own network up and running. Here are a few things to keep in mind as you shop.

1 The many wireless standards can be intimidating, but doing a bit of research will give you a good handle on the basics. Here are a few to get you started: The 802.11g standard is the current industry favorite because it is faster than 802.11b and costs less than 802.11a. Both 802.11g and b operate in the already-crowded 2.4GHz frequency band, so they suffer from more interference problems than 802.11a, which uses the 5GHz band. But 802.11a's steep cost, high energy demands, and inability to work in wireless hotspots, such as coffee houses or hotels, keep it from surpassing 802.11g in popularity. You'll also read about 802.11n, the newest standard that offers better throughput and range by using multiple data streams, and dual-band, which combines the benefits of all the standards but has a hefty price tag.

2 You shouldn't make a buying decision based solely on a router's speed rating. Most routers achieve actual speeds that are slower than the theoretical maximums advertised. This is mainly because routers can only go as fast as your Internet connection will allow. Internet connection bottlenecks will slow your router speeds, too. Instead, consider speed as one of many factors, such as the router's price, range, and risk of interference.

3 Also consider items such as the warranty and bundled security features. A manufacturer with a lengthy and comprehensive warranty is likely to make a good product and stand by it. And it's smart to look for a product with built-in firewall and 99 encryption features, including antivirus software, an NAT (Network Address Translation) firewall, and MAC (Media Access Control) address filtering.

4 Your router's range will affect the strength of your wireless signal, so if

you plan to compute some distance from your router, pay attention to the product's advertised range capabilities. Also give some thought to the router's placement in your network setup. A central location will ensure the best signal strength from the most areas of your home. And keeping the router away from outside walls, floors, and metal objects such as file cabinets will reduce interference. You may also want to consider a wireless antenna or repeater to expand the reach of your network's signal.

5 If you're really stuck and not sure which router to choose, try narrowing the field to a router from one manufacturer based on the brand of your network adapter. It's smart to use the same brand of adapter and router because they tend to work better together.

6 Don't forget about the size and style of the router. A router tends to occupy space on your desk, so you won't want it to be too much of an eyesore. Also, if you need to fit the router into a small space or take it with you, consider a small router or one that's designed specifically for travel. **PG**

BY JENNIE SCHLUETER

Shopping Checklist

In which frequency band does the router operate?

- ☐ 2.4GHz
- ☐ 5GHz
- ☐ Both

What is the router's advertised speed?

- ☐ 5Mbps
- ☐ 20Mbps
- ☐ 22Mbps
- ☐ 200Mbps

What are the router's indoor and outdoor ranges?

- ☐ 85 feet
- ☐ 115 feet
- ☐ 230 feet

Which wireless standard does the router use?

- ☐ 802.11a
- ☐ 802.11b
- ☐ 802.11g
- ☐ 802.11n draft-n
- ☐ Dual-band

What additional features does the router include?

- ☐ Extended warranty
- ☐ Antivirus software
- ☐ Firewall
- ☐ Address filtering

Computers

5 Must-Have Accessories

If you have a computer, you're undoubtedly going to want a few accessories to go with it. Here, we'll mention five that we consider necessities to our computing experiences.

1 Software: The following programs are must-haves for any computer: a security program and a productivity suite. The Internet is amazing; in minutes, you can pay your bills, catch up on the latest national and local news, order tickets to the musical "Wicked," and instant message your sister in Boston. But malicious programs, such as viruses and spyware, are a fact of connected life. A good security suite with antivirus and firewall components will help minimize the threats you encounter. Office productivity suites usually include word processing, spreadsheet, and presentation programs (at minimum). With a word processor, such as Microsoft Word, you can create fax sheets and resumés, and you can set up spreadsheets to track your investments and mark the progress of your weight-loss regimen.



2 External Storage: An external drive, such as the Hitachi H31000U (\$419.99; www.hitachi.com), lets you back up your data. Its 1TB of space will give

you cavernous amounts of space to which you can back up your entire system or just the pictures of your kids, financial data, and a few emails from friends. You might consider an external DVD-RW/CD-RW drive, such as the Pioneer DVR-X122 (\$99.99; www.pioneer-electronics.com), so you can back up the info on your hard drive to CD or DVD and store the discs somewhere outside your home. External drives usually attach to your computer pretty easily with either a FireWire or USB 2.0 cable.



3 Printer: If you occasionally need to copy a recipe, you like to create digital files of the pictures friends send you, or you like to print your own digital photos, you'll appreciate an all-in-one device that lets you print, copy, and scan. Many of these devices let you print borderless 4x6 pictures directly from your camera (or memory card). To print directly from your camera, the camera and printer will both have to be

PictBridge compatible. To print from a memory card, the printer needs a compatible card slot.



4 Backup Power: Summer can be stormy, with lightning strikes and power outages, either of which can damage or destroy delicate electronics. Protect your computer (and data) with a power conditioner. All of the units provide surge protection, and some feature multiple outlets with battery backup so you have a few minutes to save your data and shut down your computer and peripherals in a sudden loss of power.



5 Cleaning Supplies: Computers, and especially keyboards and mice, present unique cleaning challenges. They are dust and fingerprint magnets, but they're hard to keep clean because you shouldn't use alcohol-based or abrasive cleaners or even plain old water on any of the components. Antistatic wipes help keep the dust off of delicate LCDs, and compressed air will blow the dust and crumbs from among the keys on your keyboard. Most often, antistatic wipes are safe to use on notebook screens and CRTs, as well. **FG**

BY KATHRYN DOLAN

Computers

Top 5 Things To Know

No matter what your level of skill, there are a few basics you should know in order to enjoy the most productive, safest computing experience possible. Here are our Top 5.

1 Prevent data loss. If you're in the market for a new computer now, it's smart to know exactly what extras you're going to want or need before you get home. Besides the keyboard, mouse, monitor, and tower, you'll want to get a good surge protector that will keep your new investment safe from damage as a result of a power outage or electrical surge. A UPS (uninterruptible power supply) is even better than a surge protector because it has a backup battery that keeps the power flowing smoothly for a few minutes after an outage. This will give you time to save what you were working on and properly shut down the computer to avoid data loss.

2 Protect yourself. Antivirus and firewall software are two things you'll need to protect your computer if you plan to go online. There are many third-party products available for both antivirus and firewall protection, but you may elect to use built-in programs such as Windows XP's firewall. (Built-in antivirus is not available with WinXP.) Regardless of what protective software you decide to use, make sure

you keep it enabled and set to the product's recommended settings. The trick to ensuring your firewall and antivirus do their jobs is that you have to keep them up-to-date. Most programs have a method for allowing you to manually (or your computer to automatically)



check for updates so the software can detect new viruses, scams, and the like.

3 Perform backups. Even if you have been vigilant about performing routine maintenance, you'll likely experience a computer crash at some time. Whether it's a problem with your operating system or a burned-out hardware component, unless you have backed up the information, you may not be able to retrieve it—ever. Avoid this headache by scheduling regular backups. Once you've backed up your files and/or hard drive to an external drive, copy important files to a DVD and further secure your important data by storing it at an off-site location.

4 Consult an expert. If you have a computer problem you can't fix, find help. Clicking through error messages or putting up with slow processing speeds is annoying and can be a sign of a larger problem. Before you lose your valuable time and data, get a professional to put things right. There are many options, including Best Buy's Geek Squad. This "24-hour computer support task force" offers carry-in, phone, and onsite support. The squad also makes house calls.

5 Budget for extras. Shopping for new computers these days is pretty tempting. It's easy to find a system for around \$500, but don't let that low number fool you. Remember that owning a computer comes with some additional expenses.

For starters, some computers at the sub-\$500 price point don't include a monitor, so you'll want to watch for that and figure it in if necessary. If you don't already have one, you'll need to buy a printer and USB cable if you want to print anything. Also factor in your monthly ISP fee and look into whether you'll have to pay for a high-speed modem and installation or if they're included. Other extras could include productivity software such as Microsoft Office (you won't get this with a sub-\$500 PC, either), security software subscription fees, printer ink and paper, and a digital camera. **FG**

BY JENNIE SCHLUETER

Glossary Of Computing Terms

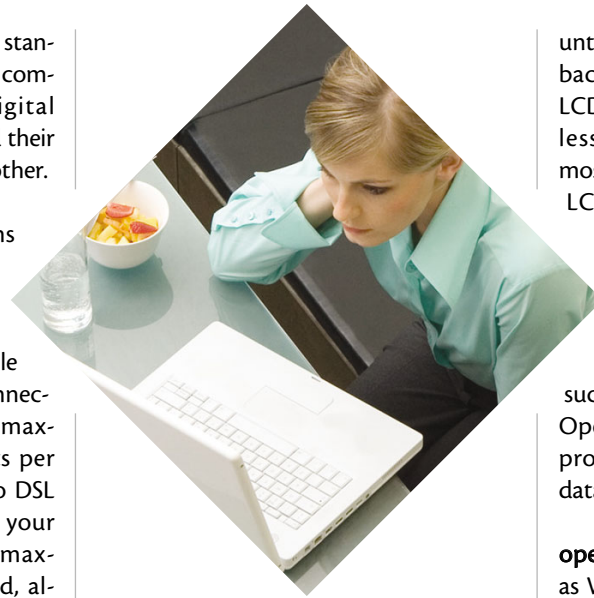
COMPILED BY KATHRYN DOLAN

Bluetooth—A short-range wireless standard that connects devices, such as computers, printers, PDAs, and digital cameras, and allows the devices and their users to communicate with one another.

broadband—Network connections that transmit data at high speeds. Consumers have a few options for accessing the Internet via a broadband connection. If your cable company offers it, you can get connections at speeds with theoretical maximums of 8 to 11Mbps (megabits per second). You can also subscribe to DSL (Digital Subscriber Line) through your phone company; DSL supports maximum speeds of 3 to 5Mbps. And, although not widely available, some power companies are exploring the possibility of offering high-speed Internet access to their customers, as well.

CRT—This older display technology for TVs and computer monitors features an electron gun illuminating phosphor dots that line the inside of a glass tube. When the phosphors are lit, they display the on-screen images. CRTs consume a great deal of power and are heavy and bulky. Additionally, CRTs are an analog technology, so, although many CRTs support digital signals, they degrade when converted to analog.

dual-core processor—This integrated circuit, which controls the computer, features two processors, each with its own cache, on a single die or chassis. In a dual-core configuration, the operating system has two processors to handle instructions, speeding up the computer and its ability to multitask.



Ethernet—A widely used LAN protocol in which computers and networks are physically linked.

firewall—Hardware or software that limits access by a network or another outside source to your computer; it also may limit your computer's access to the network. These security measures are designed to protect your computer from outsiders who'd like to exploit it in some way. By the same token, firewalls may prevent infected files on your computer from accessing the larger network and spreading the problem to other users.

LAN—A group of computers that are physically connected by wires so they can communicate with one another and share information.

LCD—This digital display technology sandwiches liquid crystals between thin sheets of glass. The crystals twist and

untwist to allow and block light from a backlight, forming the images you see. LCDs are thinner, lighter, and consume less power than CRTs. Initially used mostly in notebook PCs, you'll now find LCD TVs and computer monitors, as well as LCDs on digital cameras, cell phones, portable DVD players, and PDAs, among others.

office suite—Productivity software, such as Microsoft Office, StarOffice, and Open Office, that often includes word processing, spreadsheet, presentation, database, and financial components.

operating system—The software, such as Windows XP, Windows Vista, or Mac OS X, that controls a computer and its peripherals and serves as the primary interface for the users.




processor—Also known as a microprocessor or the CPU (central processing unit), this integrated circuit controls the computer.





RAM—Random-access memory is a standard type of memory that's read from and written to by the CPU and hardware.

upgradeable—This term refers to the ability to add or swap out hardware to boost a computer's performance, increase its speed, or replace a defective or obsolete device or component. For instance, you may add more memory; replace an old CRT with a widescreen LCD; or swap out an older graphics card for a newer one that features an ATSC TV tuner so you can watch digital TV on your computer. Look for a computer with expansion slots or empty bays.

Which Notebook Computer Is Best For You?




A notebook computer is a pretty big purchase for most people, and it's usually a bit overwhelming, too. This chart compares the features and specs from several models available at Best Buy (www.bestbuy.com) and recommends models based on certain lifestyles.

What It Is	What It Means	Compaq Presario 440 C551NR	Gateway MT6831	HP Pavilion dv6308nr
Operating system	The software (usually Windows or Mac OS X) that controls your computer	Windows Vista Home Basic	Windows Vista Home Premium	Windows Vista Home Premium
Processor	The chip that controls the computer (in general, the bigger the number, the better)	1.86GHz Intel Celeron M 440	1.6GHz Intel Core 2 Duo T5300	1.6GHz AMD Athlon 64 X2
Hard drive size	How much information the computer can hold	80GB	160GB	120GB
Optical drives	Drives that can read and write discs such as CD-Rs, DVD-RWs, or HD DVDs	DVD-ROM/CD-RW	Double-layer DVD±RW/CD-RW	Double-layer DVD±RW/CD-RW
RAM	Memory that is read from and written to by the processor and hardware; the more, the better	512MB DDR2 SDRAM	2GB PC2-4200 DDR2	1GB DDR2 SDRAM
Screen size	The diagonal measurement of the notebook's screen	15.4 inches	15.4 inches	15.4 inches
Media card reader	A slot that lets you use media cards without a separate peripheral	No	Yes	Yes
Cooler feature		Hi-def LCD	4-in-1 media card manager	QuickPlay touch-sensitive music and DVD buttons
Perfect for		College students or anyone on a budget	Users who work from a home office	Entertainment buffs looking for a desktop replacement
MSRP		From \$449.99	\$1,099.99	From \$799.99
		 8294259	 8310785	 8293624

	HP Pavilion dv2315nr	Sony VAIO VGN-FE880E/H	Toshiba Satellite U205-S5057	Apple MacBook MA700LL/A	Apple MacBook Pro MA611LL/A
	Windows Vista Home Premium	Windows Vista Home Premium	Windows Vista Home Premium	Mac OS X 10.4 Tiger	Mac OS X 10.4 Tiger
	1.6GHz AMD Athlon 64 X2	1.66GHz Intel Core 2 Duo Mobile	1.66GHz Intel Core 2 Duo Mobile T5500	2GHz Intel Core 2 Duo Mobile	2.33GHz Intel Core 2 Duo Mobile
	160GB	160GB	160GB	80GB	160GB
	Double-layer DVD±RW/CD-RW	Double-layer DVD±RW/CD-RW	Double-layer DVD±RW/CD-RW	Double-layer DVD±RW/CD-RW	Double-layer DVD±RW/CD-RW
	1GB DDR2 SDRAM	2GB PC2-5300 DDR2	1GB PC-4200 DDR2 SDRAM	1GB PC2-5300 DDR2 SDRAM	2GB PC2-5300 DDR2 SDRAM
	14.1 inches	15.4 inches	12.1 inches	13.3 inches	17 inches
	Yes	Yes	Yes	No	No
	Dual-core processor for excellent media management	Built-in Web camera	Fingerprint reader	Loaded with software	iSight Web cam
	Users looking for an affordable all-purpose laptop	Users who like to stay connected to family and friends	Road warriors who need full functionality but a small size	Shutterbugs and amateur video editors	Those looking for a robust, full-featured system that can grow with them
	From \$999.99	\$1,349.99	\$1,299.99	\$1,299	\$2,799
					
	8293483	8231246	8231102	8165219	8154953

Which Desktop PC Is Right For You?

When you shop for a desktop PC, you'll see lots of similar deals. The comparison chart below shows how subtle—yet important—the differences can be. If you can't find one of these on Best Buy's Web site (www.bestbuy.com), visit or call your local Best Buy store, and it should be available there.

What It Is	What It Means	Acer Aspire 4400+ MT500A	Apple Mac mini MA608LL/A	Apple Mac Pro MA356LL/A
Processor	The chip that controls the computer (in general, the bigger the number, the better)	AMD Athlon 64 X2, 2.2GHz	Intel Core Duo; 1.83GHz	2 Intel Xeon 5100; 2.66GHz
Hard drive size	How much information the computer can hold	320GB	80GB	250GB
RAM	The memory a computer uses to run all PC applications	2GB	512MB	1GB
Optical drives	Drives that can read and write discs such as CD-Rs, DVD-RWs, or HD DVDs	Double-layer DVD±RW/CD-RW	Double-layer DVD±RW/CD-RW	Double-layer DVD±RW/CD-RW
Operating system	The software (usually Windows or Mac OS X) that controls your computer	Windows Vista Home Premium	Mac OS X 10.4 Tiger	Mac OS X 10.4 Tiger
Loaded software	Preinstalled applications for performing specific tasks	Adobe Reader 7; CyberLink PowerDVD; NTI CD Maker Gold	iCal2; Dashboard; Spotlight; Mail 2; iChat AV3	iLive '06; Spotlight; Dashboard; Safari; iCal
Graphics card	Controls the quality of your video and images	Nvidia GeForce 6100	Intel Graphics Media Accelerator 950	Nvidia GeForce 7300 GT
Ports	A socket that gives your computer access to different peripherals	8 (4 front, 4 rear); 1 FireWire; 1 serial; 1 parallel	2 USB; 1 FireWire	5 (USB 2.0); 2 (USB 1.1); 4 FireWire
Best for		Managing multimedia	Style-conscious users in a tight space	Computer power user
Coollest feature		Processor—one of the best on the market	Powerful software (included)	Quad-core processor
Best Buy price (before any rebate)		\$719.99	\$799	\$2,499.99
				
		8276661	8040283	7985978

	Compaq Presario 356 SR2150NX	eMachines 925 T5226	Gateway E6320 E6320	Gateway 935 GT5428	HP Pavilion a6000n
	Intel Pentium 4 356, 3.33GHz	Intel Pentium D 925, 3GHz	Intel Core 2 Duo, 1.86GHz	Intel Pentium D 935, 3.2GHz	AMD Athlon 64 X2, 2.2GHz
	120GB	250GB	500GB	250GB	250GB
	512MB	1GB	2GB	1GB	1GB
	Double-layer DVD±RW/CD-RW with LightScribe	Double-layer DVD±RW/CD-RW	Double-layer DVD±RW/ CD-RW	Double-layer DVD±RW/ CD-RW	Double-layer DVD±RW/CD- RW
	Windows Vista Home Basic	Windows Vista Home Premium	Windows Vista Home Premium	Windows Vista Home Premium	Windows Vista Home Premium
	Microsoft Works 8, Adobe Reader 7.0, DVD Play	Works 8.5, Money 2006, Adobe Reader 8.0	Works 8.5, Money 2006, Digital Image Starter, CyberLink Power2Go	Works 8.5, Money 2006, Digital Image Starter, CyberLink Power2Go	Works 8.5, MyDVD; Money 2006
	ATI Radeon Xpress 1100	Intel Graphics Media Accelerator 950	Nvidia GeForce 7650 GS	Intel Graphics Media Accelerator 950	Nvidia GeForce 6150 SE
	4 USB (2 front, 2 rear)	6 USB (2 front, 4 rear); 1 serial; 1 par- allel	6 USB; 2 FireWire; 1 serial; 1 parallel; 1 S- Video; 1 composite	6 (2 front, 4 rear); 1 serial; 1 parallel	7 USB (3 front, 4 rear); 2 FireWire
	Digital photo enthusiasts	Everyday productivity	Gamers and TV lovers	The whole family	Entertainment buffs
	LightScribe-enabled DVD burner	15-in-1 digital media manager	Built-in TV tuner and 8-channel audio	Dual-core processor	All-in-one media manager software
	\$464.99	\$529.99	\$1,129.99	\$559.99	\$529.99
					
	8223077	8297041	8297149	8297069	8295392

Driving With The Stars

Satellite Radio In Your Car

Satellite radio is a good tool when you're in your car. You don't have to station-hop as signals fade, and you don't have to surf around to avoid poorly recorded local ads. Best of all, you won't be limited to the "top" 40 songs. You can find what you want to listen to, at any time, and from just about anywhere you drive. We'll help you figure out the best way to open your car's doors to satellite radio.

Many new cars have XM or SIRIUS compatibility (and a free trial subscription) built in. If you're shopping for a new car anyway, make satellite radio a priority.

If a new vehicle isn't in the budget, consider a car stereo receiver (aka a head unit or deck) with satellite radio capability. The Pioneer DEH-P2900MP (\$120; www.pioneerelectronics.com), for example, replaces your current receiver and connects to your existing speakers. It works with either XM or SIRIUS, requiring a Pioneer service-specific tuner and antenna (the GEX-P920XM for XM or the SIR-PNR2 for SIRIUS; \$100 each). With a Car Deck Interface Adapter (\$49.99), the DEH-P2900MP is iPod-compatible, as well.

Professional installation is one way to set up a new head unit. Best Buy's service starts at \$51.99. Satellite radio subscription fees aren't included in the cost of the hardware or installation. For XM or SIRIUS, you'll pay \$12.95 per month to subscribe on a single radio and \$6.99 a month for up to five additional radios.

Portable receivers, on the other hand, don't require changing your car's hardware and often adapt to home, office, or "wearable" environments with simple kits. The Delphi SKYFi3 (\$199.99; www.delphi.com) for XM is a sleek receiver, sporting a legible display; it includes a docking cradle, charger, antenna, dash mount, and remote control. Set up the cradle and antenna and insert the SKYFi3; the FM modulator sends XM signals through your car's FM radio. The SKYFi3 also has a MicroSD slot for adding MP3 and WMA files and internal flash memory for recording and time-shifting live XM radio. To keep cables out of sight, Best Buy offers antenna and portable cable installation starting at \$41.99.

Portability vs. Expense

If it's not as important to have a portable system as it is to have a convenient, inexpensive way to listen to satellite radio, look at plug-and-play car kits. Most lack the detailed displays and advanced functionality of head units and complete portable systems, but they're less costly than either option. The Advanced Global Technology Sportscaster (\$59.99; www.advancedgt.com) is inexpensive and has both a cassette adapter and FM transmitter. Display and listening options are limited but easy to learn and navigate. As with other receivers, Best Buy's installation team can set up a cradle, antenna,



Delphi SKYFi3
\$199.99 • www.delphi.com

and power cable to help keep wires and cables out of the way.

The introduction of personal satellite radios makes it easy to listen anywhere, at any time. The Directed Electronics Stiletto 100 (\$249.99; www.directed.com) for SIRIUS doesn't require a docking station or external antenna to pick up live satellite radio. You can carry it in the car on your evening walk. It stores 100 hours of radio recordings or other music files and can record programs daily or weekly. If your car stereo has a line-in jack, connect the radio's headphone output to the line-in input on the head unit. Otherwise, listen with portable speakers or earphones (if you're not driving) or plug in an FM modulator and transmit the music or program through your car's radio.

There are plenty of ways to get XM or SIRIUS satellite radio in your vehicle. Hard-wired systems combine power and advanced features. Portable receivers offer various connection options and flexibility. Whichever path you choose, you'll have plenty of opportunity to enjoy the journey. **FG**

BY GREGORY ANDERSON

Roam Free With Bluetooth

A Few Of Our Favorite Wireless Gadgets

In many ways, Bluetooth technology can give some of your CE devices a boost by making them more convenient to use. Whether it's

giving you the freedom to go wireless or letting you go hands free, Bluetooth can make it happen. We've rounded up a few of our favorite Bluetooth

accessories to show you how they can make a good thing even better. **CE**

BY JOY MARTIN

Kensington Bluetooth

Bluetooth accessories are great, but they aren't of much use to you if your computer isn't Bluetooth-enabled.

Lucky for you, Bluetooth is easy to add with an adapter, such as Kensington's

Bluetooth USB Adapter 2.0.

For less than \$30, you can link up to seven devices to your Windows XP PC or Mac OS X desktop or laptop through an encrypted

connection, and all you need is an open USB port.



USB Adapter 2.0 • \$29.99 • us.kensington.com

Jabra

The convenience of having a cellular phone can be invaluable, but some situations are less convenient than others for a conversation. If you've ever received a call while cooking dinner, you know exactly what we're talking about. With the addition of a Bluetooth headset, multitasking is a lot easier. One nice option is the Jabra BT125, which is a

Bluetooth 2.0 headset that weighs less than half an ounce, making it comfortable. The Jabra BT125 is an affordable option with features that let you answer or end a call, use voice dialing, and control the volume, all without having to access your phone.



BT125 • \$39.95 • www.jabra.com

Motorola Bluetooth

Everyone has his or her own preferences and habits when it comes to music. So while you may enjoy rocking out to '90s grunge while cleaning the house, the people around you might prefer peace and quiet. Whatever you prefer, you can enjoy it without disturbing anyone with Motorola's Bluetooth Stereo Headphones HT820. In addition to enabling you to roam freely within a 30-foot range of your Bluetooth-enabled computer, the Skype-certified (www.skype.com) headphones come with an integrated microphone and will automatically notify you of incoming Skype calls, so you won't miss a beat. (If your computer didn't come with Bluetooth capability, a Bluetooth adapter [see above] will have you up and running in no time.)



Stereo Headphones HT820 • \$119.99 • www.motorola.com

Scosche Bluetooth

Although cell phones enable us to talk on the go, it's not always safe to do so. (Talking while driving is one clear example that comes to mind.) Bluetooth headsets are one option for hands-free cell phone operation, but if an earpiece is not for you, consider a speakerphone, such as the Scosche Bluetooth Speakerphone, for your car. The compact unit clips to your vehicle's visor, giving you easy, hands-free access. Eight hours of talk time and an included car charger means you'll never be without your speakerphone for long.



Speakerphone • \$89.95 • www.scosche.com

What MP3 Player Is Best For You?

Music For Your Lifestyle

Just as our personalities differ, the features that are important to us on an MP3 player vary, as well. Whether you're an avid runner, college

student on a budget, mobile professional, or all-around iTunes junkie, a little shopping will lead you to an MP3 player to suit your needs. We're here to

help with suggestions for four players made to fit different lifestyles. **PC**

BY JENNIFER JOHNSON

FOR THE AVID RUNNER

Insignia NS-DVB4G

\$159.99 • www.bestbuy.com



When you're working out, the last thing you want to deal with is excess wires or skipping music. The Insignia

NS-DVB4G solves both of these issues with its Bluetooth capabilities and flash storage. Wired headphones come with the NS-DVB4G, but you can get rid of those wires using compatible Bluetooth headphones. With Bluetooth headphones, you can listen to your music at up to 30 feet from the player. In addition, the 4GB of internal flash storage can handle the bumps and jolts along your jogging path without missing a beat. Perhaps equally as important, this MP3 player is portable and lightweight.

FOR THE MOBILE PROFESSIONAL

Creative 30GB Zen Vision:M

\$249.99 • www.creative.com



While traveling, you want to be as efficient as possible. That's why some users might require more functionality from their MP3 players than simply entertainment. The Creative Zen Vision:M has a Removable Disk Storage feature that lets you carry business files on the same device as your music, movies, and pictures.

This MP3 player also comes with a personal organizer that can store daily tasks, contact lists, and calendar information. To help maintain consistency, the organizer can synchronize with Microsoft Outlook. To top it off, the Zen Vision:M also serves as a voice recorder.

FOR THE COLLEGE STUDENT ON A BUDGET

Creative Labs Zen V Plus 2GB

\$99.99 • www.creative.com



Living on a budget doesn't have to mean going without music and entertainment. For under \$100, you can pick up Creative Labs' Zen V Plus 2GB. This small and lightweight MP3 player can hold up to 1,000 songs (based on four-minute recordings encoded at 64Kbps WMA [Windows Media Audio]). Best of

all, this player supports a variety of audio formats, and it also displays JPEG images, so you can feel connected to friends and family. When you're not listening to music, use the built-in voice recorder, alarm, and clock to stay organized and ensure you don't miss a class or forget an assignment.

FOR THE ALL-AROUND ITUNES JUNKIE

Apple iPod

30GB is \$249.99, 80GB is \$349.99 • www.apple.com

If you've already accumulated a library full of songs through Apple's popular iTunes software, you'll need an iPod in order to play your songs on the go. In addition to listening to music, you can watch videos or display photos on the iPod's 2.5-inch color screen. Because iTunes offers more than audio files, you'll always have plenty of options from which to choose: You'll find full-length movies, music videos, podcasts, and games. Plus, with 30GB or more of storage space (depending on model), you can fit a lot of entertainment in your pocket.



COURTESY OF APPLE

ReCellular Recycling Program

A Used Cell Phone Is Never Useless

The EPA says between 1.5 and 1.9 million tons of e-waste (computers, cell phones, monitors, TVs, etc.) piled up in U.S. landfills in 2005. Electronic devices contain heavy metals and toxic chemicals; cell phones frequently contain 500 to 1,000 components made from lead, mercury, cadmium, nickel, and lithium, to name a few. Recycling helps prevent those metals and toxins from leaching into landfill soil.

Best Buy affiliate ReCellular (www.recellular.net) refurbishes and resells or recycles cell phones and peripherals (batteries, chargers, and parts). ReCellular's donation program, WirelessRecycling.com (www.wirelessrecycling.com), partners with charities and organizations to help them raise money by serving as the recycling repository for donated cell phones.

Collection Site

WirelessRecycling.com has more than 40,000 U.S. collection sites where you can drop off your used cell phone so it can be refurbished and given to someone in need, such as abused women or soldiers stationed overseas; parted out to repair other phones; or recycled. From the WirelessRecycling.com home page, click Donations, enter your ZIP code, and click Go to find a nearby collection site.

The Drop Off Locations page lists the centers. The first sites are often retail partner stores, such as Best Buy, and local charities that collect cell phones to raise money. Before donating your phone to a charity, search GuideStar.org (www.guidestar.org) and make sure the organization

is legitimate. Toward the bottom of the page, you'll see addresses for manufacturers, charities, and collection sites where you can ship your used phone.

You can set up a drop-off site through your church, school, community group, or company and arrange with WirelessRecycling.com to earmark funds for a charity, school, church, or civic group. The phones don't have to work (but if they do, cancel your service before donating your phone), and your group gets credit regardless. For information on setting up a cell phone donation program, call program coordinator Vicki Barker (734-205-2204; vbarker@reccellular.com). **FG**

BY KATHRYN DOLAN



Data Purge

Before donating your phone, remove personal info. The Cell Phone Data Eraser tool (www.wirelessrecycling.com) lists unique codes that'll purge personal data. For instance, if you have a Samsung SCH8500, you can remove the phone book, call lists, timers, voice-mail, text messages, banner, voice memos, and organizer. Some phones, such as the Palm One Treo 700W, require a hard reset to restore the phone to its factory settings.

To find the codes or reset instructions for your phone, select the brand from the Manufacturer drop-down menu, select your phone from the Model drop-down menu, and click Download Instructions. ●

Wireless Shopping Tips

Docks For An iPod

BY BLAINE FLAMIG

If the iPod's best attribute is its ability to take your digital music library wherever you go, its next best trait is its flexibility in letting you unplug your earbuds and listen to tunes externally via a dock in the bedroom, kitchen, living room, or office.

The audio quality that docks produce varies greatly. Generally, expect to pay more for docks that offer strong, distortion-free volume; an equalizer; a subwoofer for deep, resonating bass; and quality full- and mid-range speaker drivers for treble that's not flat or tinny. Your ears are the best judge of audio quality, however. While shopping, make sure the volume for each dock is turned off and listen to each one individually to discern the differences.

Just as docks offer varying audio quality, they offer varying functionality. Although most docks can recharge your iPod's battery and play music externally via speakers, others integrate an AM/FM tuner, station presets, alarms, CD players, and other functions. Altec Lansing's inMotion iM600 (\$149.95; www.alteclansing.com), for example, doubles as a clock radio. Some docks that are water-resistant and/or include handles are ideal for toting to pools, campsites, picnics, tailgate parties, and other locales.

Odds are you're not the only iPod owner in your home, but you may all have different models. Still, you can usually kill two iPods with one dock, as many docks, including Logitech's mm32 Portable Speakers (\$79.99; www.logitech.com), are compatible

with multiple versions. If you want a dock that recharges your iPod, Apple and third-party manufacturers offer adapters for various iPod models for Apple's Universal Dock System (\$49.99; www.apple.com).

Although not mandatory, a built-in display that shows song, volume, bass, and treble data makes using a dock more enjoyable, as do reverse, skip, and play/pause buttons. A remote control with good range that lets you bypass the iPod's Click Wheel to control volume and navigate your song library is a nice extra. If you plan to control the dock from across a room, be sure the remote can cover the distance and that its display is large enough to easily view.

Ports are an often overlooked dock feature, but if you own a video iPod (30GB, \$249; 80GB, \$349; www.apple.com), for example, you'll want a dock with a built-in S-Video or composite video port so you can watch your video on a TV. Additionally, an auxiliary line-in port lets you connect the dock to other MP3 players, home-theater systems, CD/DVD players, notebooks, and gaming consoles. A USB port lets you connect the dock to a computer for use as a speaker, plus transfer tunes from your music library and possibly directly from the iTunes Music Store to your iPod.

SHOPPING CHECKLIST

- What built-in functions do I want?

- ☐ AM/FM tuner
- ☐ Alarm
- ☐ CD/DVD player
- ☐ Clock radio
- ☐ Other

□ What features do I want?

- ☐ Remote control
- ☐ Display
- ☐ Reverse, Forward, Skip, Play/Pause buttons
- ☐ Other

☐ What ports do I want built in?

- ☐ S-Video
- ☐ Composite Video
- ☐ Auxiliary line-in
- ☐ USB

Notes

[illegible]

Music Players

5 Must-Have Accessories

Nailing down a list of must-have accessories for an MP3 player is tricky. Just because an iPod dock for the kitchen tops your list, for example, doesn't mean it even cracks an avid jogger's Top 5. Ultimately, though, five general categories stand out, although other notable accessories include extra batteries, cleaning kits, and Bluetooth adapters.

1. Headphones.

A runner sometimes doesn't fare well with earbuds. They fall out due to the constant jostle of running, and this can become a burden for anyone hoping to get in a good workout. It's essential to match your earphones to your needs, or your experience will be diminished. A runner should opt for a headphone that's secure, and in this case, an in-the-ear earbud would be the ideal choice. Headphone styles are numerous and include wired/wireless earbuds, which are perfect for mobile users (students, mass transit users), and earcups, which can satisfy any audiophile's need to hear minute musical details.

2. Speakers/docks.

Whether you're making sandcastles on the beach, taking your camper to the lake, or organizing a picnic with the family, there's no limit to where you can listen to your MP3 player. You needn't let the pair of headphones it came with constrain you, either; portable speakers and docks are perfect for letting the entire group listen to tunes in open areas. In addition, most speakers have a dock to recharge your player's battery. Check your MP3 player manufacturer's Web site for model numbers of available speakers and docks, and you'll likely be able to buy it at Best Buy.

3. FM transmitter.

If you're motoring about in a truck or Trans Am for leisure or work, MP3 players can provide the soundtrack for that motion. To do so, you'll need an FM transmitter that can beam your MP3 player's tunes over your car radio. Connect the transmitter to your player, tune in to a designated frequency on the car radio dial, tune to that same frequency on your transmitter, and you are listening to music, movies, podcasts, audiobooks, etc. Transmitters range from basic (maybe offering three presets) to sophisticated models (providing remote controls and visual interfaces), making it easy to find one that suits your needs.

4. Cases.

So you decided to splurge and buy a high-end MP3 player. Because you've already spent so much, it's only right to assume that you have everything you need, right? Not quite. Although they're partially a vanity purchase, cases can also protect your player from scratches, bumps, water, physical drops, and mishaps that can otherwise shorten your player's life. However, no matter what type of MP3 player you own, it's wise to purchase a case to protect it in different environments. Cases are relatively inexpensive (around \$20 and up) and can provide a little more insurance against

any accidents or normal wear and tear that can happen. Because not all cases work with all players, check your player's Web site or a retailer like Best Buy for ones that hold your MP3 player.

5. Armbands.

We all know that music is a huge exercise motivator. Although they're often overlooked, armbands can mean a difference between a workout you're proud of vs. one that's constantly interrupted by accidental drops and tugging, tangled cords. No matter your sport, an armband, such as Griffin's Tempo (\$24.99; www.griffin-technology.com), which fits around your bicep, generally offers the most stability and comfort. Otherwise, a basic lanyard is an inexpensive, yet effective, alternative for less-strenuous workouts. **FG**

BY BLAINE FLAMIG



MP3 Players

Top 5 Things To Know

Finding the perfect digital music player is all about asking the right questions. DRM (digital rights management) and other competing standards have made it tougher than ever to find a player that will meet all of your needs, but here are the five most important things to keep in mind while shopping, along with the answers you'll want to hear before committing to a particular device.

1 Memory capacity.

The theoretical capacities listed for most MP3 players were based on audio recorded at low quality, which makes small file sizes. Songs recorded at higher quality, which is probably what you will be listening to most often, will take up more space, so you'll fit fewer songs on the player. For example, a player can store three times as many songs recorded at 64Kbps as those at 192Kbps, but the sound quality for the 192Kbps tracks is more than three times better than that of the 64Kbps tracks.

Where storage is concerned, there are eight bits in a byte, 1,024 bytes in a KB (kilobyte), 1,024KB in a MB (megabyte), and 1,024MB in a GB (gigabyte). If you record tracks at 192Kbps, divide that number by eight to get 24KBps. There are 60 seconds in a minute, so that means your audio requires about 1,440KB (1.41MB) of storage per minute or about 84.5MB per hour. Therefore,

each gigabyte of memory will hold about 12 hours of 192Kbps audio.

2 Type of memory.

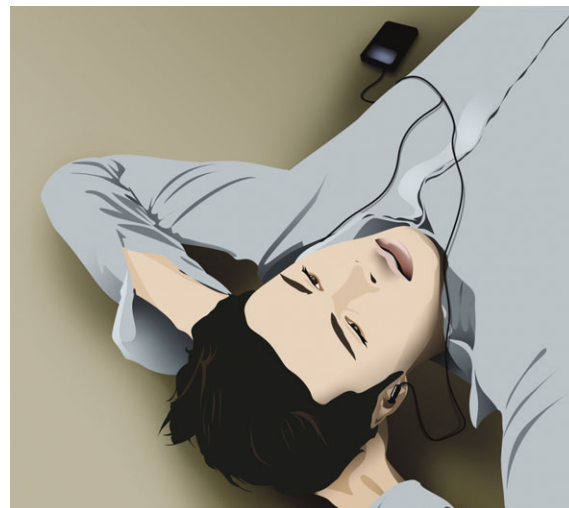
Hard drives offer relatively high storage capacities at a relatively inexpensive price, but they have a lot of moving parts that tend to break if you drop the device while jogging, which often ruins the player beyond repair. Flash memory (also called solid-state memory) is more expensive per megabyte and gigabyte than hard drives, but because the memory uses no moving parts, it is more durable. Devices that use flash memory are terrific for running or other activities where you may shake or drop your player.

3 File format support.

Just as digital photos and movies use a variety of file formats, so do digital audio files. You'll see MP3, AAC (Advanced Audio Coding), WMA (Windows Media Audio), and FLAC (Free Lossless Audio Codec), to name a few. If you have already converted or downloaded a large amount of music in a particular format, make sure the player you want can handle it. If not, you can tailor your conversions and downloads to match the capabilities of the device.

4 File downloads.

This is a biggie. Due to conflicting DRM schemes and other factors, to download



tracks directly from Apple's iTunes Store (www.itunes.com), you'll need an iPod. Several subscription-based services, such as Napster To Go (www.napster.com), which let you download unlimited amounts of music to a particular player, are only compatible with certain makes and models. Look for the PlaysForSure or Works With Napster To Go logos when shopping to find devices that are compatible with your favorite services.

5 Battery life.

Official battery life measurements are performed in a laboratory and, as a consequence, don't always match real-world performance. First, ask the salespeople if they have any experience with the battery life of a product you are considering. Then, be sure to ask how long the batteries should last if you listen at a reasonable volume level (loud music consumes more electricity because the headphones require more power). Finally, you might also look for power-cutting options, such as the ability to turn off the screen's backlight and audio normalization (which tones down loud music). **FG**

BY TRACY BAKER

MP3 Player Glossary

Who doesn't want an MP3 player? It can help you relax, provide motivation, and keep you up-to-date on news. When you head to your local Best Buy (www.bestbuy.com) to snag one, make sure you have this glossary so you can choose the perfect model.

AAC—Short for Advanced Audio Coding, it is a competitor of the more popular MP3 file format.

Click Wheel—Apple's proprietary circular control on the front of the iPod.

download—In terms of digital music, downloading is when you retrieve a song from an Internet site or another network connection and save it to your computer or music player. You'll download songs from music service Web sites such as iTunes, Napster, or Rhapsody.

DRM—Digital rights management is a security mechanism for digital media. A common DRM scheme for digital music involves getting a license file to authorize playback of a free or purchased song.

earbuds—Small, circular devices you put into your ears that serve the same function as headphones. MP3 players come with their own earbuds, but you can, of course, purchase a separate pair that are more comfortable or of better quality.

flash memory—Solid-state memory with no moving parts that is lightweight and small. In terms of MP3 players, a flash-based player is lighter and smaller than a hard drive-based player, and it also won't skip. Thus, flash-based players are popular for use during exercising. However, the capacity of a flash drive isn't as large as a hard drive.

FM tuner—In MP3 players, a built-in FM tuner lets you listen to local radio.

hard drive—Storage in which rigid platters are inside a fixed casing. In terms of MP3 players, a hard drive-based player is larger and heavier than a flash-based player. Because of the moving parts (the platters), hard drive-based players are also prone to skipping. However, the capacities are much larger than flash-drive capacities.

iTunes—A digital media player application that loads onto your computer and lets you play, organize, and download and purchase music, videos,

podcasts, and television shows for an iPod or computer.

MP3—Perhaps the most popular digital audio encoding format. It compresses audio to about one-twelfth the original size while still providing excellent sound. In general, a 1MB MP3 file will last about one minute.

playlist—A queue of songs a user creates to play on a computer, burn to a CD, or transfer to a digital audio player. The playlist includes only directions to the location of the songs, not the songs themselves.

PlaysForSure—A popular Microsoft certification that ensures portable devices, such as MP3 players, and media, such as digital music and videos, are compatible with each other.

podcast—A downloadable episode that is similar to a radio program. A user can subscribe to a podcast for updated episodes, or she can download podcasts one at a time. A podcast is usually available in MP3 format.

screen—The display on the front of a portable music player. A player's screen can either display in color or black and white.




WMA—Windows Media Audio is a digital audio format created by Microsoft to compete with the MP3 format. WMA files are smaller than MP3 files.

widescreen—A screen with a 16:9 aspect ratio. In terms of music players, the Microsoft Zune and the Creative Zen Vision W are two that have wide screens.



Which MP3 Player Is Best For You?

Pods are cool, sure, but you have other choices when it comes to listening to your tunes. This chart compares the most important—and coolest—features from select MP3 players available at Best Buy (www.bestbuy.com).

		Hard Drive		
What It Is	What It Means	Apple iPod	Creative Zen Vision: M	Microsoft Zune
Memory type	Hard drive (moving parts, more capacity) or flash (no moving parts, lightweight, perfect for exercising)	Hard drive	Hard drive	Hard drive
Capacities	How much memory the player has (on models available at Best Buy)	30GB; 80GB	30GB	30GB
Songs	How many songs the player can hold	7,500; 20,000 (based on 4 minutes per song at 128Kbps AAC)	7,500 (based on 4 minutes per song at 128Kbps WMA)	7,500 (based on 4 minutes per song at 128Kbps WMA)
Video capability	Some MP3 players can play video, as well as music	Yes	Yes	Yes
Colors	Several players offer a variety of color choices	Black, white	Black, white, blue, pink, green	Black, white, brown, pink
FM tuner	Lets you listen to radio stations	No	Yes	Yes
Music services supported	Not all MP3 players can play songs from all music services	iTunes	AOL Music Now; Yahoo! Music; Napster; Soundbuzz; Audible.com	Zune Marketplace
Battery life	How long the battery will last when playing music	14 hours; 20 hours	14 hours	14 hours
Perfect for		Those interested in a storage device as much as a music player	Users who like to get their music from a variety of sources	Users who enjoy sharing and who might be hard on their devices
Coolest feature		It's an iPod: Need we say more?	Included Personal Organizer software	Wi-Fi lets you share music with other Zune users
MSRP		\$249; \$349	\$249.99	\$249.99
				
		8046072	7657555	8330521

Flash

	Apple iPod nano	Creative Zen V Plus	Insignia NS-DVB4G	Samsung YP-K3JQR	SanDisk Sansa e280R
	Flash	Flash	Flash	Flash	Flash
	2GB; 4GB; 8GB	2GB; 4GB; 8GB	4GB	2GB	8GB
	500; 1,000; 2,000 (based on 4 minutes per song at 128Kbps AAC)	1,000; 2,000; 4,000 (based on 4 minutes per song at 64Kbps WMA)	1,000 (based on 4-minute songs at 128Kbps WMA)	500 (based on 4-minute songs at 128Kbps WMA)	2,000 (based on 4-minute songs at 128Kbps WMA)
	No	Yes	Yes	No	Yes
	Black, silver, pink, blue, green	Black (several accent colors), white, pink	Black	Red	Black
	No	Yes	Yes	Yes	Yes
	iTunes	Best Buy Digital Music Store; Napster; Rhapsody	Best Buy Digital Music Store	Best Buy Digital Music Store; Rhapsody	Best Buy Digital Music Store; Napster; Rhapsody
	24 hours	15 hours	20 hours	25 hours	20 hours
	Joggers; iPod lovers who aren't interested in carrying their entire library with them	Users who want hard drive features in a flash drive package	Active music lovers who don't want to mess with earphone wires	Audiophiles on a budget	Folks who want more features, such as video and an FM tuner, than an iPod nano
	Diminutive size	Video capability	Bluetooth capability	Light-up touchpad	MicroSD expansion slot for more memory
	\$149; \$199; \$249	\$99.99; \$149.99; \$219.99	\$159.99	\$119.99	\$249.99
					
	8046081	7965222	8224851	8273272	8026254

Which Cell Phone Is Right For You?

Your cell phone is more than a phone—it can be a camera, music player, text messenger, and fashion statement. All these features and more make the cell phone the must-have electronics device. Compare the features of cell phones available at Best Buy (www.bestbuy.com) to help find your next phone, and we provide Best Buy's pricing (as of press time), as well.

What It Is	What It Means	LG enV VX9900 	LG Chocolate	Motorola RAZR V3m, Silver
Form	The physical style of the phone	Candy bar	Slider, internal antenna	Clamshell, stub antenna
Bluetooth capability	Enables wireless communication with other devices	Yes	Yes	Yes
Internationally compatible	Uses GSM standard used in Europe and Asia	No	No	No
Voice-activated dialing	Dial your contacts by simply speaking into the phone	Yes	Yes	Yes
MP3 player	Plays digital music	Yes	Yes	No
Service plan provider(s)	What provider(s) the phone will work with	Verizon	Verizon	Verizon
Dimensions	Thickness and weight	0.8 inches; 4.6 ounces	0.69 inches; 3.53 ounces	0.5 inches; 3.5 ounces
Battery talk time	How long you can talk between charges	4.17 hours	3 hours	3.3 hours
Perfect For		Multimedia entertainment buffs	Style-conscious music lovers	Those who want full functionality in a small form factor
Coollest feature		Hidden QWERTY keyboard	Can record calls up to 1 minute	VCAST music and video downloads
Best Buy price (original; with service plan)		\$399.99; \$129.99	\$299.99; \$59.99	\$249.99; Free
				

	Motorola MOTO KRZR K1m	Motorola Q SMART PHONE!	Palm Treo 700p SMART PHONE!	Sanyo Katana Blue Sapphire	Sony Ericsson W300i Walkman
	Clamshell, internal antenna	Candy bar; uses Windows Mobile	Candy bar; uses Palm OS	Clamshell, internal antenna	Clamshell, internal antenna
	Yes	Yes	Yes	Yes	Yes
	No	No	No	No	No
	Yes	Yes	No	Yes	Yes
	Yes	Yes	Yes	No	Yes
	Verizon; Sprint PCS; Cingular	Sprint; Verizon	Sprint; Verizon	Sprint PCS	Cingular
	0.67 inches; 3.63 ounces	0.47 inches; 4.06 ounces	0.9 inches; 6.4 ounces	0.58 inches; 3.4 ounces	0.9 inches; 3.3 ounces
	4.16 hours	4 hours	4.7 hours	3 hours	9 hours
	RAZR lovers	Email and productivity addicts	Road warriors who need a mobile office	Those who don't want to listen to music on their phones	Music lovers who want long battery life
	Glossy good looks	Lightest, thinnest Windows smartphone	Near-broadband download speeds	Large, very bright external and internal displays	FM radio
	\$249.99; depends on provider	\$499.99; \$99.99	\$549.99; \$199.99	\$279.99; Free	\$199.99; Free
					

exit



happy
birthday

Birthdays are always around the corner, and that leaves us wondering: "What makes the perfect gift?" Here we give you a leg up on what can bring a little fun to the party, as well as the lucky birthday recipient. These CE finds are available at Best Buy stores and www.BestBuy.com.

SanDisk ImageMate
12-in-1 USB 2.0
Card Reader

In case you forgot which card
you bought them last year.
\$37.79



PNY Attaché 2GB
USB 2.0 Flash Drive
P-FD02GU20

Everyone can use more
storage space.
\$39.99



exit



**Logitech X-230 2.1
Speaker System**

Volume grows more
valuable with age.
\$39.99



**Creative Labs Live! Cam
Notebook Pro Web
Camera**

Keep in touch *and* in view.
\$54.99



**SanDisk Sansa c240 1GB
MP3 Player and Image
Viewer**

Wrap a portable, personal party.
\$69.99



**RCA 900MHz
Wireless
Headphones**

For the music lover who
won't be tied down.
\$62.99

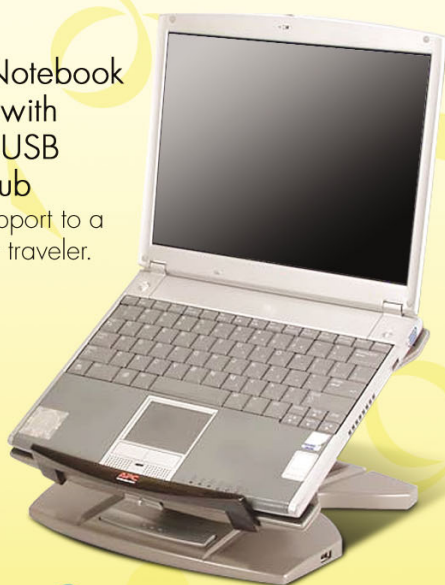
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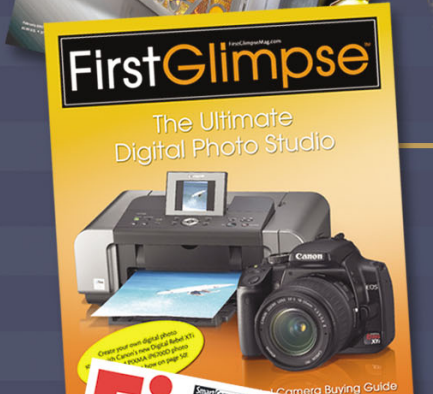
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